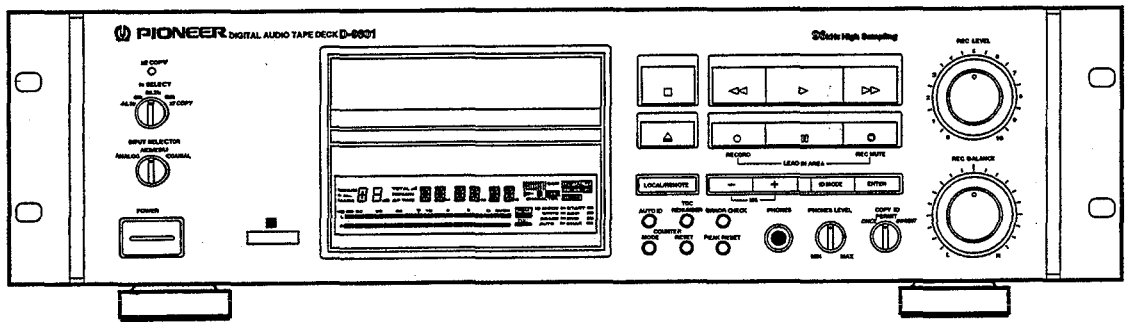
PIONEER®
The Art of Entertainment

Operating Instructions

D-9601

DIGITAL AUDIO TAPE DECK

DAT
Digital Audio Tape



Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

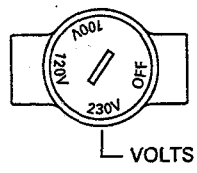
WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE:
RECORD THE MODEL NUMBER AND SERIAL NUMBER OF THIS EQUIPMENT BELOW. THE NUMBERS ARE ON THE REAR PANEL.
MODEL NO. D-9601
SERIAL NO. _____
KEEP THESE NUMBERS FOR FUTURE USE.

LINE VOLTAGE SELECTOR SWITCH

The line voltage selector switch is on the rear panel. Before your model is shipped from the factory, this switch is set to the 230V position . Check that it is set properly before plugging the power cable into the AC outlet. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows.

1. Disconnect the power cable.
2. Use a Medium-size (flat blade) screwdriver.
3. Insert the screwdriver into the grove on the voltage selector, and set the voltage value of your area to the line from the "VOLTS" indication.



IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS – The safety and operating instructions should be retained for future reference.

HEED WARNING – All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.

WATER AND MOISTURE – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet base-ment, or near a swimming pool, etc.

LOCATION – The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING – The appliance should not be mounted to a wall or ceiling.

VENTILATION – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION – If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING – The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES – An outdoor antenna should be located away from power lines.

NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE – The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged.
- Objects have fallen, or liquid has been spilled into the appliance.
- The appliance has been exposed to rain.
- The appliance does not appear to operate normally or exhibits a marked change in performance.
- The appliance has been dropped or the enclosure damaged.

SERVICING – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

OUTDOOR ANTENNA GROUNDING – If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

CART – An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

NEC – NATIONAL ELECTRIC CODE

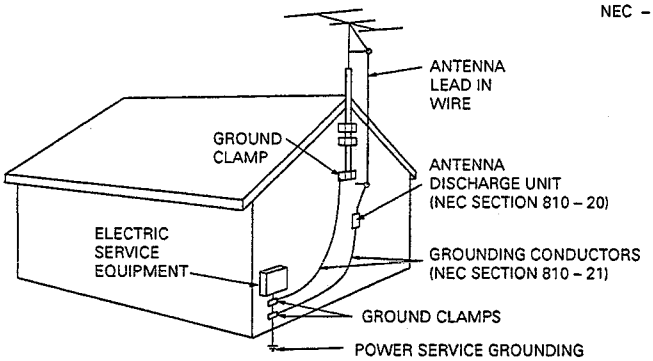


FIG. A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Information to User
Alteration or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment.

This product complies with the Low Voltage Directive (73/23/EEC), EMC Directives (89/336/EEC,92/31/EEC) and CE Marking Directive (93/68/EEC).

CAUTION:
This product satisfies FCC regulations when shielded cables and connectors are used to connect the unit to other equipment. To prevent electromagnetic interference with electric appliances such as radios and televisions, use shielded cables and connectors for connections.

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PRECAUTIONS ON INSTALLATION

INSTALLATION

- This unit is a high-technology product employing a microcomputer. To avoid mutual interference with your TV, it is recommended to install this unit in a separate location or turn off the power to your TV when operating this unit.
- When using a simple FM antenna with your tuner, install the components and antenna so that the antenna element is separated from the tuner by a distance of 1.5 m or more. Use of an outdoor antenna is recommended for optimum reception.
- Regardless of whether you are using a simple FM antenna or an outdoor antenna connected by coaxial cable, make sure there is no slack in the wire or cable near the components. Minimize the length of the wire or cable for optimum noise resistance. If there is excess wire, it is best to take up the slack by coiling and securing the wire at a location as far from the unit as possible.

Heat

Do not place the unit near a heating device, on top of an amplifier or in a location where it is exposed to direct sunlight, as excessive heat may damage the finish and internal parts. Also, do not place a cloth on top of the unit or block the provided ventilation openings in any other way. Always make sure that the installation location provides sufficient ventilation to prevent overheating.

Humidity, contamination

Do not install the unit in an excessively humid or dusty location, as this may cause malfunctions and breakdowns. Also, avoid placing the unit next to kitchen counters or other locations where it is subjected to oily fumes.

Noise interference

When the unit is placed directly on top of the amplifier it may pick up humming or other noise during recording. A TV set used in close vicinity may also cause noise.

Condensation

When the unit is moved from a cold to a warm environment, or when the room temperature rises sharply, condensation forms on parts of the tape transport mechanism, causing malfunctions when the tape deck is operated immediately. To avoid this, allow the tape deck to acclimatize to the new temperature by waiting about one hour before operating the unit.

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

MOUNTING THE D-9601 ON ANY EIA (Electronic Industries Association (USA))-STANDARD RACK

- Use the screw holes on the mounting panel (left and right on the front) to attach the D-9601 to any 19-inch EIA-standard rack.
- Be sure to remove the four insulators from the bottom of the D-9601 before mounting it on the rack.
- For rack mounting of the D-9601, use 3/16-inch diameter screws at least 3/8-inch long x 4 (not supplied with this unit).

CAUTION

- Do not mount directly on top of a power amplifier. If the amplifier generates a large amount of heat, the D-9601 may malfunction. It may also pick up humming or other noise.
- Remove the D-9601 from the rack before transporting.
- When moving the rack mounted with the D-9601, try to avoid any shock to the system.

MAINTENANCE

Cleaning the front panel and case

For normal cleaning, wipe with a soft, dry cloth. For difficult-to-clean areas, wipe with a soft, well-wrung cloth dampened with a mild detergent diluted in water, and then wipe again with a dry cloth. Be careful that substances such as alcohol, thinner, benzine, and insecticides do not come into contact with the unit, as they may damage the finish. Also, before using any chemically treated cloth, be sure to read carefully the precautions provided with the cloth.

Cleaning tape heads

After a long period of use, accumulation of dust on the heads will cause poor sound quality (dropouts, noise, etc.) or incorrect operation. To remedy this, clean the tape heads with a commercially available cleaning cassette.
If the problem persists, the heads may be worn. In such cases, contact your nearest Pioneer Service Center.

- When cleaning the heads, be sure to follow carefully the instructions of the cleaning cassette.

FEATURES

High Sampling Mode (High Sampling)

This unit is equipped with a High Sampling Mode (abbreviation: HS). The sampling frequency can be selected as 96kHz or 88.2kHz. By operating the signal processing LSI and the capstan and drum motors at 2 times the Standard (SP) Mode, Record and Playback beyond 40kHz can be performed. Since the tape is made to run at double speed, the recording time is reduced to half the normal time; but 1 hour of continuous High Sampling recording is possible with a 120-minute tape.

Built-In HS Digital Interface

In addition to a conventional digital interface, the unit is provided with an HS digital interface that enables digital copying even in HS Mode. Digital editing in HS Mode is possible through digital connection of 2 or more units.

Double-Speed Digital Copy (x 2 COPY) Mode

A Double-Speed (x 2 COPY) Mode is provided which, through digital connection of 2 or more units, enables digital copying at double speed with a tape in Standard (SP) Mode (sampling frequencies: 48kHz and 44.1kHz).
With this function the time needed for digital copying is reduced to half the conventional time, and since it is a digital copy, there is no deterioration in sound quality.

Sampling-down Conversion Function

By switching the DIP switch on the rear panel, output of digital audio data from the AES/EBU output terminal of this unit at the time of HS mode is possible by using a decimation filter to convert the sampling frequency of 96 kHz down to 48 kHz (88.2 kHz to 44.1 kHz). Master tapes recorded in HS mode using this function permit easy digital copying to standard mode tape.

Setting Auto ID Level

When recording in Auto ID Mode, the detection level of the Start ID between songs can be changed over. Any of the following set values can be selected: –40, –50, –60, and –70dB.

Versatile Remote Control Function

An RS-422, which is the industry standard for editing purposes, and an 8-pin parallel remote control terminal are provided as standard equipment. Also, by using a Wireless Remote Control, Search functions such as Up and Character Pack can be recorded.

Subcode Data Function

This function records and erases all types of time information, including the Start ID, which indicates the start of a song, the Skip ID, which is convenient for skipping portions you do not want to listen to, and the End mark, which denotes the song number data and the end of recording. Furthermore, TOC data, which are useful for tape editing and cataloging, can also be recorded, and by using these data, AI (Artifical Inteligence) Search can now be performed.

Character Pack Function

The unit is equipped with a function for recording and playing back (displaying) character data defined in DAT format. This function enables the analog recording of song titles up to 60 characters in length, names of performers, memo writing, and other character data at the start of each song (as Start ID contents). When character data are read during Playback, they are automatically scrolled (from right to left) in the Counter display part. Moreover, since the read data are stored in a microcomputer, they can be re-displayed by a simple button operation.

Start Memory Function

The status of the following settings prior to turning the power OFF will be stored in memory even after the power has been turned OFF: Local/Remote selection, Auto ID ON/OFF selection, and the detection level of the blank portion between songs.

High-Quality Sound Circuit

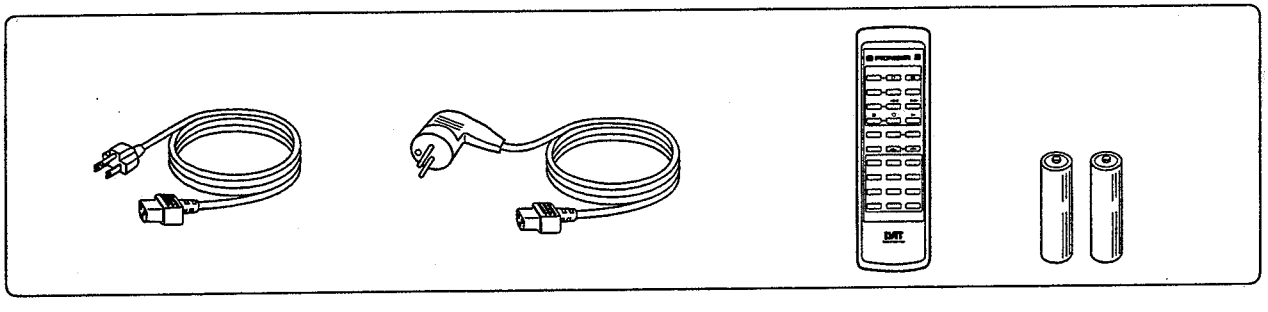
High-quality sound was made possible by providing a pulse flow 1-bit D/A converter, 1-bit wide-range linear A/D converter, and a clean clock circuit that suppresses directional swing of the clock signal timing axis.

Confirmation of the accessories

Power cable for the US

Power cable for Europe

Operating instructions
Wireless remote control unit
Remote control unit batteries ... 2



NOTE:

For use in the USA, please use the power cable for the US .

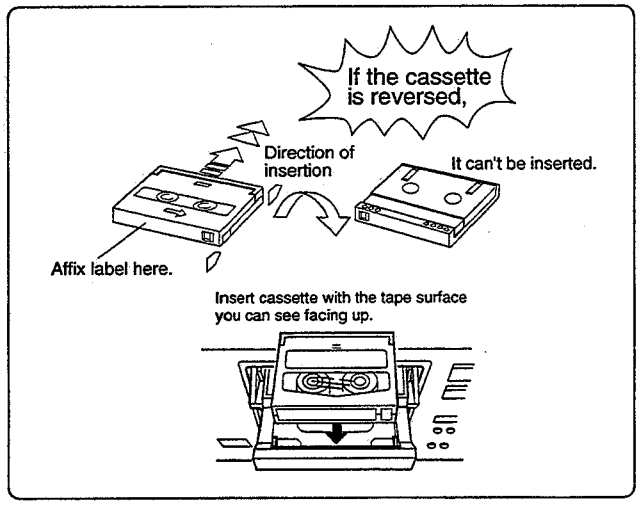
For use in the Europe, please use power cable for Europe.

The accessory power cables can only be used on the continent of North America and in Europe.

DAT CASSETTE TAPES

Loading a DAT Cassette

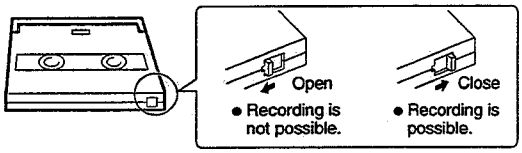
A DAT Cassette, unlike a compact cassette, has a sealed construction that protects the tape and hub hole with a face cover (lid) and a slider. Except when it is being loaded into the unit, the cassette is designed to prevent the entry of dust and dirt, which are the cause of Dropout (signal loss), the worst enemy of digital recording.


If the cassette is reversed,
Direction of insertion
It can't be inserted.
Affix label here.
Insert cassette with the tape surface you can see facing up.

- DAT-use cassette tape, similar to video cassette tape, can only be used on 1 side (in 1 direction).
- Do not pull the tape out of the cassette or touch the tape with your fingers.

CAUTIONS for Use of Cassette Tapes

- **To prevent unintentionally erasing valuable recordings:**
  When a cassette tape has been recorded, re-recording will erase the previously recorded material. The DAT Cassette is provided with a mechanism to prevent recording, so that important recordings are not erased.



- **Long-play tape:**
  This unit cannot accommodate thin tape (tape longer than 120 minutes). Use of such tape may result in faulty operation.

CAUTIONS for Handling

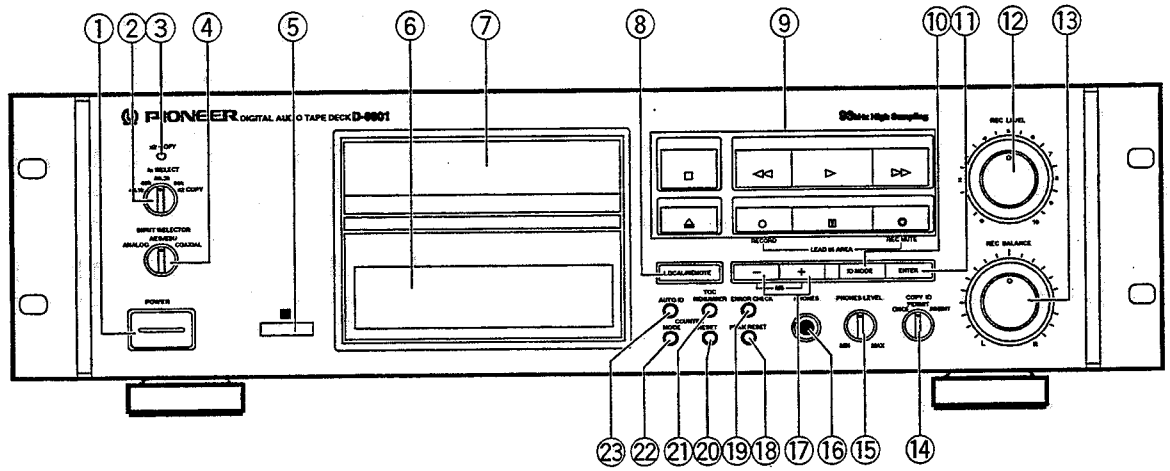
- When a cassette tape is brought into a warm room from outdoors when the outside temperature is cold, condensation may form on the tape. Wait about 1 hour before using the tape. The tape will be damaged if it is used with moisture on it.
- Do not use a hair dryer or other appliance to dry a tape with moisture on it.
- Do not open the face cover of the cassette and pull out the tape or touch it with your fingers.
- Do not drop the cassette, knock it against another object, or shake it violently.
- The cassette cannot be used upside down.

CAUTIONS for Storage

- Store tapes in their cases to avoid dust and dirt.
- Do not put or store tapes in the following places:
  1. Where the temperature is high (over 35°C / 95°F) or the humidity is high (over 80%);
  2. Near a source of magnetism (near a speaker or on a television set, etc.);
  3. In direct sunlight.
- After use, rewind the tape to the start and put it away.
- Avoid keeping a tape inserted in the unit for a long period of time (more than 1 month).

NAMES AND FUNCTIONS OF PARTS

FRONT PANEL



① Power Switch (POWER)

Operation starts about 4 seconds after the power has been turned ON.

② fs Select Switch (fs SELECT)

44.1k: Records in Standard Mode of 44.1kHz sampling frequency when an analog signal is being input.

48k: Records in Standard Mode of 48kHz sampling frequency when an analog signal is being input.

88.2k: Records in High Sampling Mode of 88.2kHz sampling frequency when an analog signal is being input.

96k: Records in High Sampling Mode of 96Hz sampling frequency when an analog signal is being input.
High Sampling recording (88.2k or 96k) in a wide range above 40kHz is possible, but the recording time is reduced to half that of Standard Mode.

x2 COPY: This position is selected when a digital copy of a tape with a sampling frequency of 44.1kHz or 48kHz is made at double speed. (Refer to Page 16.)

③ Double-Speed Digital Copy Mode Indicator (x2 COPY)

Lights up when Double-Speed Copy Mode is selected.

④ Input Selector Switch (INPUT SELECTOR)

Selects the recording source input terminal.

ANALOG: When recording from a unit connected to a line input terminal;

AES/EBU: When recording from a unit connected to a Canon-type digital input terminal (XLR-3 type).

COAXIAL: When recording from a unit connected to a coaxial digital input terminal (IEC958, RCA terminal).

⑤ Remote Control Light-Receiving Part

Receives light from the Wireless Remote Control.

⑥ Display

(Refer to Page 9.)

⑦ Cassette Tray

The cassette tray slides in and out of the unit according to the operation of the OPEN/CLOSE button (⏏).

⑧ LOCAL/REMOTE Selector Button (LOCAL/REMOTE)

LOCAL Mode: Accepts operations performed with the buttons on the unit, with a parallel remote control, and with the Wireless Remote Control.

REMOTE Mode: Accepts commands only from the RS-422. At this time, the key lock indicator (▮▮▮▮▮▮▮▮) will light.

- When switching from REMOTE Mode to LOCAL Mode, keep the button depressed until the key lock indicator (▮▮▮▮▮▮▮▮) goes out (about 2 seconds).
- The mode prior to turning the power OFF will be stored in memory even after the power has been turned OFF.
- With operation of unit buttons, parallel remote control, or wireless remote control at the time of REMOTE mode, flashing display of "REMOTE" will be made at the counter display part to indicate that the operation will not be accepted.

⑨ Operation Buttons

⏏ **: OPEN/CLOSE button**
Used to eject or insert a tape. (Refer to Pages 13 and 24.)

■ **: STOP button**
Stops movement of the tape.

◄◄ **: REWIND button**
Rewinds the tape. When pressed during Playback, REVIEW operation is engaged. (Refer to Pages 24 and 25.)

►► **: FAST FORWARD button**
Fast-forwards the tape. When pressed during Playback, CUE operation is engaged. (Refer to Pages 24 and 25.)

► **: PLAY button**
Used to play back a tape or start recording (after the RECORD button has been operated).

●: RECORD button
When pressed, Record Mode (Record Standby status) is engaged, and the REC indicator and PAUSE (II) indicator are illuminated.
To start recording, press either the PLAY (►) button or PAUSE (II) button.

II: PAUSE button
Temporarily stops tape operation during Record or Playback. When pressed again, operation is resumed. The tape cannot be paused during FAST FORWARD or REWIND operation.

O: REC MUTE button
Creates and records a blank portion on the tape. (Refer to Page 15.)

⑩ ID MODE button (ID MODE)
Used for Subcode editing. Selects the desired ID Mode. (Refer to Pages 19 – 21 and 23.)

⑪ ENTER button (ENTER)
Used for Subcode editing. When pressed, enables storage/deletion of a Subcode selected with the ID MODE button.

⑫ Recording Level knob (REC LEVEL)
Sets the recording level during analog recording. (Refer to Page 14).

⑬ Recording Level Balance knob (REC BALANCE)
Adjusts the recording level left-right balance during analog signal input.

⑭ COPY - ID switch (COPY ID)
Sets the SCMS status bit (ID 6) while recording is in progress.

ONCE: Only a first-generation digital copy to a public-use DAT can be made.

PERMIT: Digital copy to a public-use DAT can be performed any number of times.

INHIBIT: Digital copy to a public-use DAT is prohibited.

⑮ Headphone Level knob (PHONES LEVEL)

⑯ Headphone Jack (PHONES)

⑰ Music Search button (MS +, –)
Used for music Search and other operations. (Refer to Page 25.)

⑱ PEAK RESET button (PEAK RESET)
Resets the holder of the peak margin display. When pressed continuously, the peak margin display changes to real time display. (Refer to Page 14.)

⑲ ERROR CHECK button
When this button is pressed during Playback, error correction status is displayed in the Counter display part as "E A2 B3", "A" indicates error correction of A head and "B" indicates error correction of B head. (Refer to Page 9.) Return to the original counter display will be made when this button is pressed again or when the COUNTER MODE button is pressed.

⑳ COUNTER RESET button (COUNTER RESET)
When the Counter Mode is set to TIME Counter and the RESET button is pressed, the Counter is reset to "0 00 00."

㉑ RENUMBER button (TOC RENUMBER)
Used when re-recording (rearranging) song numbers or recording TOC (Table of Contents) data.

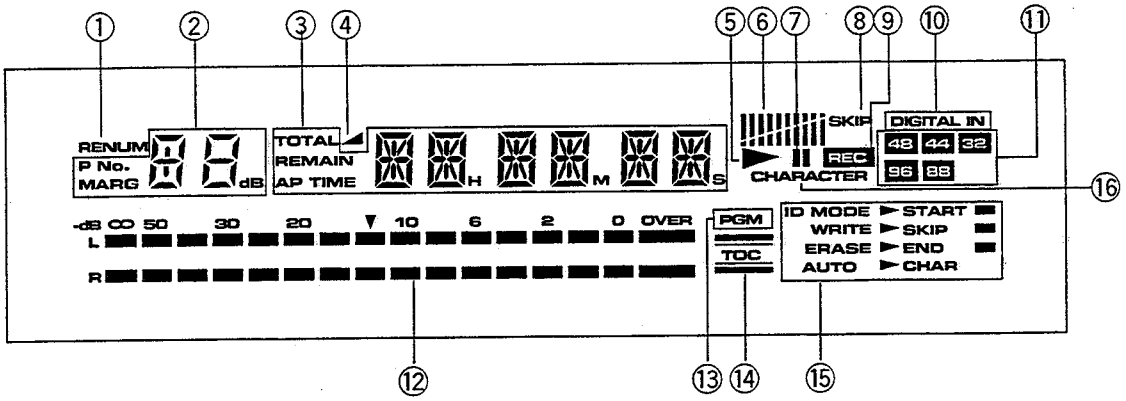
㉒ COUNTER MODE button (COUNTER MODE)
Used when selecting Counter display. (Refer to Page 10.)

㉓ AUTO ID button (AUTO ID)
During Record: Used when AUTO ID is recorded automatically.

During Playback: Used when skipping portions you do not want to listen to. (Skips from the SKIP ID to the subsequent START ID.)
Also, when a character pack has been read during playback, this is used to switch the scroll display of the counter display part on and off.

- The input mode prior to turning the power OFF will be stored in memory even after the power has been turned OFF.

DISPLAY



① Renumber Indicator (RENUM)

② Peak Margin (MARG)/Program Number (P.No.) Indicator

③ Counter Indicator

Displays tape running time data such as absolute time (A-TIME), program time (P-TIME), and remaining time (REMAIN), and character data such as the Character Pack, operation display, etc.

④ Character Data Remaining Indicator

Indicates that undisplayed character data are on the left side in Character Input Mode.

⑤ Play Indicator (►)

⑥ Key Lock Indicator

Indicates that button operation is not possible (when REMOTE is selected with the LOCAL/REMOTE button). Only RS-422 operations are possible.

⑦ Pause Indicator (II)

⑧ SKIP Indicator (SKIP)

Indicates that SKIP Play is ON.

⑨ Record Indicator (REC)

⑩ Digital Input Indicator (DIGITAL IN)

Indicates that digital input (COAXIAL or AES/EBU) has been selected.

⑪ Sampling Frequency Indicator

This indicates the present sampling frequency. When the signal is interrupted during digital input recording, repeated flashing indication will be made in the sequence of 48→44→96→88.

⑫ Record/Play Level Indicator

OVER: Lights up when the input level is too high. At this time the Peak Margin display flashes 00dB (during analog signal input).

⑬ PGM Indicator

Indicates that a one-point memory has been recorded (flashing indication).

⑭ TOC Indicator

Indicates that TOC data have been read from the tape. Flashes when TOC data are being written or read.

⑮ ID Indicator

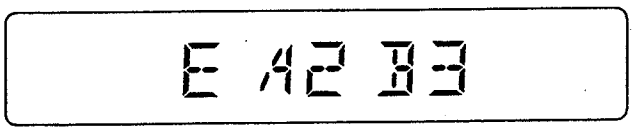
ID MODE	: Indicates type of ID Mode.
►	: Indicates selected ID Mode.
■	: Indicates detected ID.
WRITE	: Indicates that ID Write Mode is engaged.
ERASE	: Indicates that ID Erase Mode is engaged.
AUTO	: Indicates that Auto ID Write is ON during Record.

⑯ Character Indicator (CHARACTER)

Indicates that Character data from the tape have been read.

Error Check Indicator

When the ERROR CHECK button is pressed during Playback, error correction status is displayed in the Counter display part.



Both Head A and Head B are displayed, accompanied by a number from 0 – 9. Error correction is 10% of the number displayed; "9" indicates an error that is practically uncorrectable. In this case the head may be dirty, so use of a head cleaner is recommended.

NOTE:

• 9 will be displayed when an unrecorded tape is played back.

Counter Display Selection

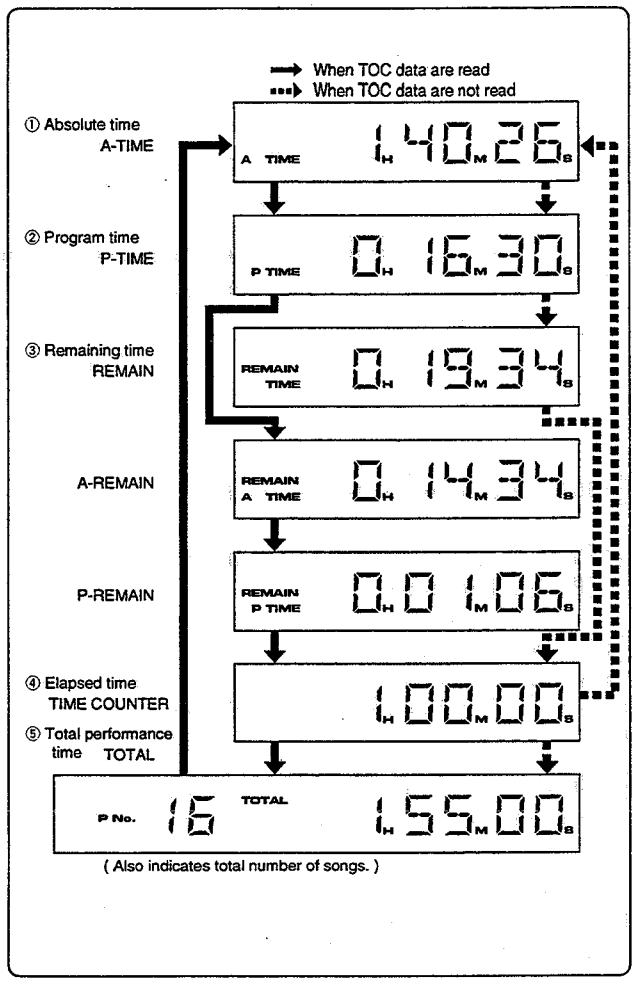
When the COUNTER DISPLAY button is pressed, the following is displayed:

During Playback or Record when TOC data have not been read:
A-TIME → P-TIME→ REMAIN → TIME COUNTER → A-TIME...

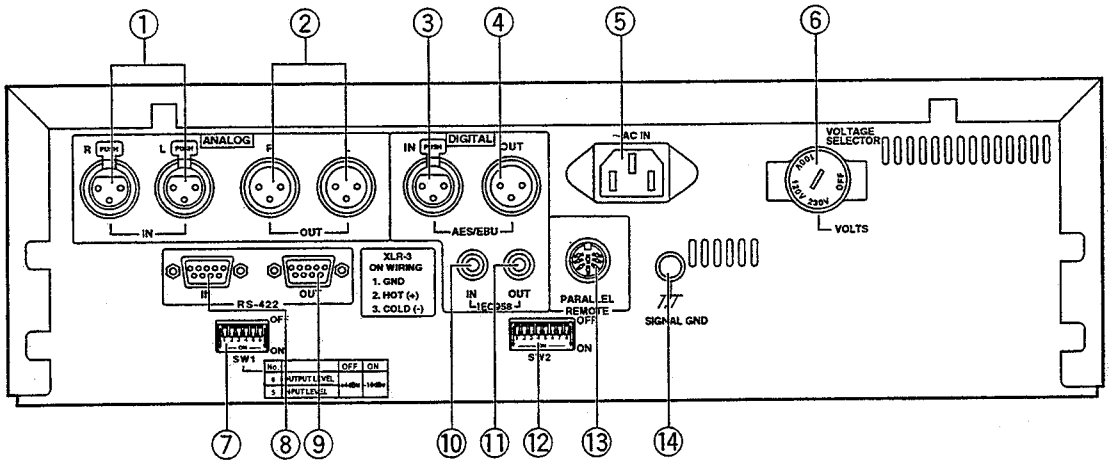
During Playback after TOC data have been read:
A-TIME → P-TIME → A-REMAIN → P-REMAIN →TIME COUNTER → TOTAL → A-TIME.

A-TIME (Absolute Time):
Indicates the time elapsed (absolute time) from the start of tape rewind.
P-TIME:
Indicates the time elapsed for each song (or 1 song).
REMAIN (Remaining Time):
Indicates the amount of remaining tape.
A-REMAIN (Remaining Play Time):
Indicates the time remaining between the current location on the tape and the End mark.
P-REMAIN (Time Remaining on a Song):
Indicates the time remaining on the song currently being performed (time remaining until the start of the next song).
TIME COUNTER (Elapsed Time):
Indicates time elapsed from the Counter reset location.
TOTAL (Total Performance Time):
Indicates the total performance time of the program being recorded.

NOTE:
- *A-TIME, REMAIN, A-REMAIN, TIME COUNTER, and TOTAL are displayed based on the Standard Mode (fs = 44.1kHz or 48kHz). In High Sampling Mode (fs = 96kHz or 88.2kHz), real time is half the displayed time.*
- *A-REMAIN, P-REMAIN, and TOTAL are not displayed during Playback when TOC data (refer to Page 17) have not been read or when recording from an intermediate point on the tape.*
- *REMAIN and TIME COUNTER are not clocks. Use them as a standard only.*



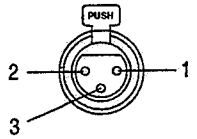
REAR PANEL



Before making or changing the connections, switch off the power switch and disconnect the power cord from the AC outlet.

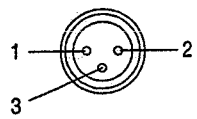
① Analog Input Terminal (ANALOG IN L/R)

Analog audio signal (L/R) input terminal. It is a Canon-type (XLR-3-31) terminal with balanced input. The terminal polarity is: No. 1 pin: GND; No. 2 pin: HOT (+); No. 3 pin: COLD (–).



② Analog Output Terminal (ANALOG OUT L/R)

Analog audio signal (L/R) output terminal. It is a Canon-type (XLR-3-32) terminal with balanced output. The terminal polarity is: No. 1 pin: GND; No. 2 pin: HOT (+); No. 3 pin: COLD (–).



③ AES/EBU Digital Input Terminal (DIGITAL AES/EBU IN)

Input terminal for digital audio signal in AES/EBU format (pro format).

- Use the cable for the digital signal (110Ω).

④ AES/EBU Digital Output Terminal (DIGITAL AES/EBU OUT)

Output terminal for digital audio signal in AES/EBU format (pro format).

- Use the cable for the digital signal (110Ω).

⑤ Power Cable Connector (AC IN)

Use an accessory power cable for the US (color:gray) and connect it to a grounded outlet.

NOTE:

The accessory power cables can only be used on the continent of North America and in Japan. In Europe, do not use the accessory power cables. Consult with a company sales representative. Use Only Safety-Licensed Power Cables.

⑥ Voltage Selector Switch (VOLTAGE SELECTOR)

Before using the unit, set the power source and voltage within the service range of the unit. (Refer to the front cover.)

- The factory setting is 230V.

⑦ DIP Switch (SW1)

Use for the following settings: (Refer to page 12.)

1. Down converter
2. Test Mode (Keep in OFF position.)
3. Test Mode (Keep in OFF position.)
4. Wireless Remote Control ON/OFF selection
5. Output level selection
6. Input level selection

⑧ RS-422 Input Terminal (RS-422 IN)

Input terminal for controlling unit in this unit with a 9-pin serial interface. (Refer to Page 26.)

- Since this is a 9-pin D-SUB connector, make sure you use this type of cable.

⑨ RS-422 Output Terminal (RS-422 OUT)

Output terminal for control of several units, including this unit, with a 9-pin serial interface.(Refer to Page 26.)

- Since this is a 9-pin D-SUB connector, make sure you use this type of cable.

⑩ IEC 958 Coaxial Digital Input Terminal (DIGITAL IEC 958 IN)

RCA pin-type input terminal for digital audio signal in a public-use format.

- Please use a digital cable (75Ω) with a length of 3m or less.

⑪ IEC 958 Coaxial Digital Output Terminal (DIGITAL IEC 958 OUT)

RCA pin-type output terminal for digital audio signal in a public-use format.

- Please use a digital cable (75Ω) with a length of 3m or less.

⑫ DIP Switch (SW2)

Use for the following settings:
1 - 4. Machine number
5. Protocol
6. Return line
7. Test Mode (Keep in OFF position.)
8. Device type

⑬ Parallel Remote Control Terminal (PARALLEL REMOTE)

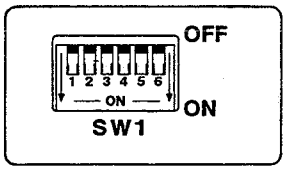
Remote control input terminal for 8-pin DIN connector.

⑭ Ground Terminal (SIGNAL GND)

Setting DIP Switches

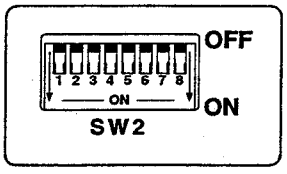
- Initially, all switches are in the OFF (upper) position.

■ SW1



No.	Item set	Setting	Function
1	Down converter (Refer to Page 24.)	OFF	Maintain HS Mode
		ON	Changeover from fs = 96kHz to fs = 48kHz (88.2kHz → 44.1kHz) (AES/EBU output only)
2	Test Mode	Keep in OFF position.	
3	Test Mode	Keep in OFF position.	
4	Wireless Remote Control prohibition (Refer to Page 27.)	OFF	Can operate.
		ON	Cannot operate.
5	Standard output level selection (Refer to Page 24.)	OFF	+ 4dBu
		ON	– 10dBv
6	Standard input sensitivity selection (Refer to Page 14.)	OFF	+ 4dBu
		ON	– 10dBv

■ SW2



No.	Item set	Setting	Function
1	Machine number	Refer to setting method described below.	
2			
3			
4			
5	Protocol (Refer to Page 26.)	OFF	SONY 9-pin protocol
		ON	ES bus
6	Return line (Refer to Page 26.)	OFF	INTERNAL
		ON	EXTERNAL
7	Test Mode	Keep in OFF position.	
8	Device type*	OFF	PIONEER DAT
		ON	Not specified

* Depending on the editing function, the device type of this unit may not be recognized and operation may not be executed. In such a case, use the unit with the DIP switch No. 8 of SW2 set to ON.

■ Setting the Machine Number

When several decks are connected in series via the RS-422 and are operated in ES bus mode, a machine number is required for identification of each deck.
With this unit, machine numbers from "00" to "15" can be set, using Nos. 1 - 4 on the SW2 DIP Switch.

SW2 ON = 1, OFF = 0

Machine number	SW2 DIP Switch			
	1	2	3	4
00	0	0	0	0
01	1	0	0	0
02	0	1	0	0
03	1	1	0	0
04	0	0	1	0
05	1	0	1	0
06	0	1	1	0
07	1	1	1	0
08	0	0	0	1
09	1	0	0	1
10	0	1	0	1
11	1	1	0	1
12	0	0	1	1
13	1	0	1	1
14	0	1	1	1
15	1	1	1	1

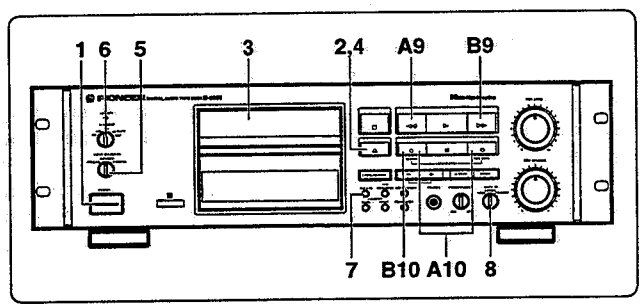
NOTE:

- *Do not set the same machine number as that of another connected deck.*
- *Set machine numbers when the power to the main unit is OFF. When a machine number has been set with the power to the main unit ON, turn the power OFF and then ON again. When the power is turned ON again, the machine number will be read.*

RECORDING

RECORDING METHOD

- A new DAT Cassette requires an initialization operation to create a lead-in area at the start of the tape so that time data and other information can be correctly recorded and played back. (Steps A9 and A10)
- When different fs exist in one tape, this may cause inconveniences for digital copies etc. Creation of tapes with mixed fs should be avoided as far as possible.



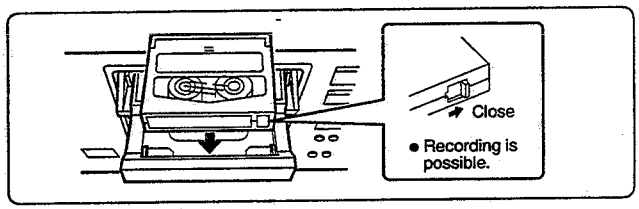
1. Press the POWER switch and turn the power ON.

2. Press the OPEN/CLOSE (⏏) button.

- The cassette tray will slide out.

3. Insert a cassette tape.

- Place the cassette tape gently on the tray, with the tape surface you can see facing UP.



4. Press the OPEN/CLOSE (⏏) button.

- The cassette tray will close.
- The cassette tray will also close if the REWIND (◄◄) button, STOP (■) button, PLAY (►) button, or FAST FORWARD (►►) button is pressed.

5. Select the input source with the INPUT SELECTOR switch.

- Confirm connection.

6. Select the Recording Mode with the fs SELECT switch.

- Select the Recording Mode (sampling frequency) during audio signal input.
- Set 44.1k or 48k during Standard Mode and 96k or 88.2k during High Sampling Mode.
- The Recording Mode during digital signal input is determined by the sampling frequency of the input signal (so this setting will not be enabled.) Also, Lock cannot be engaged when the sampling frequency is 32kHz or 64kHz.

NOTE:

- *With this unit, recording with a sampling frequency of 32 kHz (SP LP mode) is not possible with analog or digital input.*

7. Select whether or not to record the START ID automatically with the AUTO ID button.

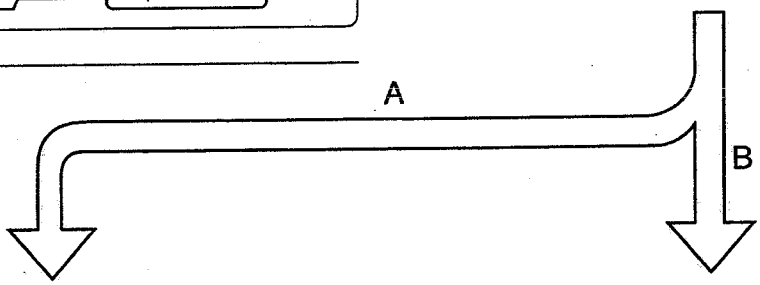
- For details regarding recording of START ID, refer to Page 18.
- For details regarding recording of program number, refer to Page 20.

8. Select Copy ID with the COPY ID switch.

ONCE: Only a first-generation digital copy to a public-use DAT can be made.

PERMIT: Digital copy to a public-use DAT can be performed any number of times.

INHIBIT: Digital copy to a public-use DAT is prohibited.



■ RECORDING FROM THE START OF THE TAPE (A)

A9. Press the REWIND (◄◄) button and rewind the tape.

- In order to record absolute time, make sure you rewind even new tapes.

A10. Press the REC (●) button while the MUTE (O) button is depressed.

- After a lead-in area has been created (Refer to Page 17), the Record Standby status will be engaged. (About 8 seconds is required when fs = 44.1kHz or 48kHz.)

[Continued on the following page.]

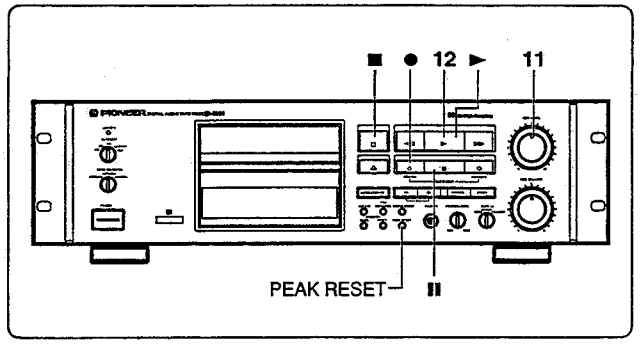
■ RECORDING FROM AN INTERMEDIATE POINT ON THE TAPE (B)

B9. Press the FAST FORWARD (►►) button and search for the location of the end of recording.

- When the END mark is detected, operation will stop (END SEARCH).
- If there is no END mark, operation will stop when an unrecorded portion is detected (BLANK SEARCH).

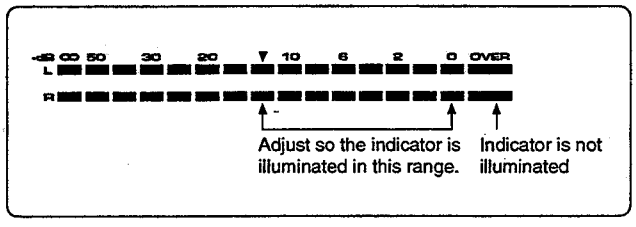
B10. Press the REC (●) button and engage Record Standby status.

[Continued on the following page.]



11. Start the performance of the source to be recorded, and adjust the recording level with the REC LEVEL knob (not enabled in the case of a digital signal input).

- If the maximum allowable input level is exceeded, the OVER indicator is illuminated and the PEAK MARGIN indicator flashes. Lower the REC LEVEL knob and press the PEAK RESET button, resetting the PEAK MARGIN display.
- During analog signal input the input sensitivity can be changed. (Refer to "Selecting the Input Sensitivity" below.)
- Once adjustment has been completed, return the source to its original position.



12. Press the PLAY (►) button.

- Recording will commence, so start the performance of the source to be recorded.
- Recording will start even if the PAUSE (II) button is pressed.
- About 8 sec. are required to record the START ID (when fs = 44.1kHz or 48kHz). In this interval no button operation will be accepted except that of the STOP (■) button.

■ PEAK MARGIN Display

The PEAK MARGIN display indicates the input level dB margin available up to the maximum allowable input level.

- The PEAK MARGIN display retains the maximum level display. If the PEAK RESET button is pressed once, the retained display is reset.
- "00" dB flashing display will be made when the input level is exceeded.

■ Auto peak reset function

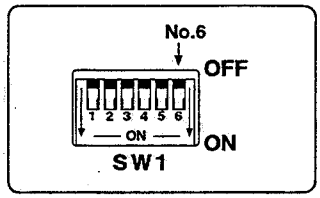
When the PEAK RESET button is kept depressed, the peak margin will be displayed in real time during that time. When the button is kept depressed for about 4 sec, auto peak reset mode will be entered and real time peak margin display will continue even after the button is released. When the button is kept pressed and auto peak reset mode is entered, "dB" will become flashing display, and when the button is released, it will return to steady lighting. When the PEAK RESET button is pressed again, return is made to normal peak margin display.

■ Selecting the Input Sensitivity (During Analog Signal Input)

During analog signal input, the input level of the standard recording level can be changed according to the output level of the unit to be connected.

Set the level with the SW1 DIP Switch No. 6 switch on the Rear Panel (facing the Rear Panel, the last switch on the right in the left set of DIP Switches).

OFF (upper position): +4dBu
ON (lower position): −10dBv



■ If the Digital Input is Interrupted:

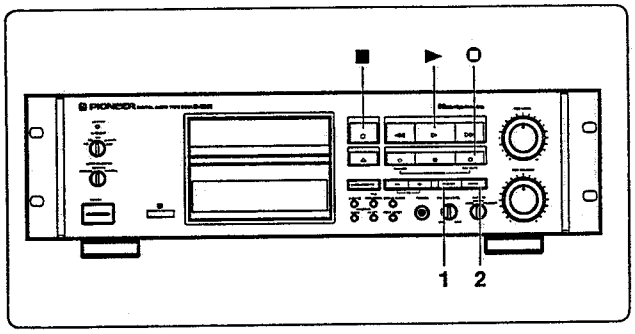
The sampling frequency indicator (48, 44, 96, 88) will flash if there is nothing connected to the digital input when the connection is broken during operation or when the digital signal is not input for any reason. If this occurs during digital recording, the PAUSE (II) indicator will flash and Record Standby status will be engaged. The unit will wait for input to be restored; if the interruption lasts longer than about 5 minutes, however, the Record status will be canceled and operation will be terminated.

■ Pausing the Record Operation

Press the PAUSE (II) button.

- Record Standby (PAUSE) status will be engaged.
- If Record Standby status continues for about 5 minutes, a mechanism will automatically stop operation to protect the tape (monitor sound is output). In this condition, only the REC indicator will be illuminated. When starting to record, press the RECORD (●) button and restore Record Standby status.

- To resume recording, press the PLAY (►) button or the PAUSE (II) button.



■ When the Record Operation is Over (END Mark Is Recorded)

1. Select "WRITE ► END" with the ID MODE button while Record is in progress or Record Standby status is engaged.

- This cannot be performed during STOP status.

2. When the Record operation is over, press the ENTER button.

- As soon as the button is pressed, the Record operation will be terminated. After an END mark is recorded for about 9 seconds (when fs = 44.1kHz or 48kHz), operation returns to the start of the END mark and STOP status is engaged. The Program Number will be displayed as EE.

■ When the Record Operation is Over (END Mark Is Not Recorded)

- When the STOP (■) button is pressed, the END mark is not recorded.

■ Recording an END Mark

With a new tape, once the Record operation has been completed, the portion following the recorded portion is blank, so it can be found by means of the BLANK SEARCH function. In the case of a previously recorded tape, on the other hand, the recorded portion cannot be searched unless an END mark is recorded at the end of a recorded portion. A DAT does not operate by erasing and then recording; instead, recording is done over the previous recording. Once something has been recorded, the end of the recorded portion needs to be defined. Once an END mark has been recorded, Playback beyond that point is not possible.

NOTE:

Once an END mark has been recorded, the tape cannot travel beyond that point (Program Number will be displayed as EE). To continue past that point, erase the END mark. (Refer to Page 21.)

■ Recording Past the END Mark

Recording can be continued after the end of a recorded portion has been searched with the END SEARCH function. In this case the END mark will be erased. The END mark can also be erased manually.

■ Creating a Blank Portion on the Tape (Using the REC MUTE (O) Button)

- If the REC MUTE (O) button is pressed while Record is in progress, the REC indicator will start to flash, and sound will not be recorded for about 4 seconds. Afterwards, Record Standby status will be engaged.
- To record a blank portion longer than 4 seconds, keep the REC MUTE (O) button depressed for as long as necessary. The REC indicator will continue flashing for more than 4 seconds, and when the button is released, Record Standby status will be engaged.
- To resume recording, press the PLAY (►) button.

DIGITAL COPY

If a digital signal connection (AES/EBU or TEC958) is made between this unit and another DAT unit, the digital signal can be copied as is. When two units are used, digital copies also can be made of tapes recorded in High Sampling Mode (fs = 96kHz or 88.2kHz).
The following types of digital copies can be made:

- Normal digital copy
- Double-speed copy
- Down converter copy

NOTE:

- *In case of digital copying of tapes with mixed fs, correct recording of the part where the fs changes may not be possible.*

■ Double-Speed Copy

This unit can make digital copies at twice the normal speed. In the case of a tape recorded in High Sampling Mode (fs = 96kHz or 88.2kHz), however, double-speed copying cannot be performed. Double-speed copying is limited to tapes recorded in Standard Mode (fs = 44.1kHz or 48kHz).
To make a double-speed copy, select "x2 COPY" with the fs SELECT switch on both the recording unit and the playback unit (x2 COPY indicator is illuminated). The subsequent procedure is the same as that for making a normal digital recording.

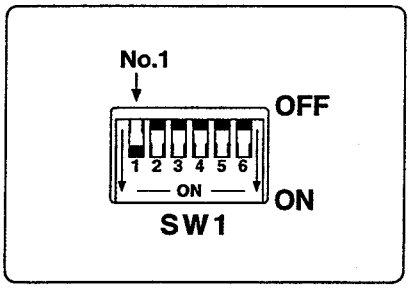
NOTE:

- *If "ANALOG" is selected with the INPUT SELECTOR switch when "x2 COPY" is being selected on the recording deck, Record operation will not be engaged.*
- *If the DIP SWITCH SW1 No. 1 switch on the rear panel of the playback deck is ON (Down Converter) during double-speed copying, the recording deck will not lock (when selecting AES/EBU).*
- *Do not set "x2 COPY" on either the recording deck or the playback deck unless you are making a double-speed copy.*

■ Down Converter Copy

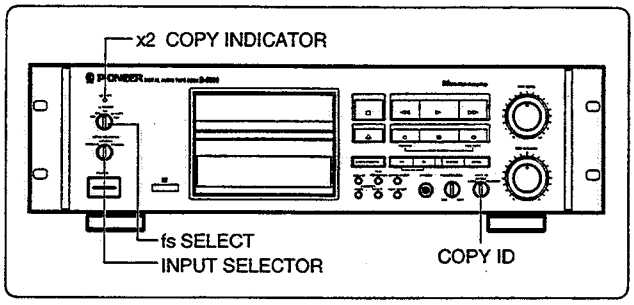
When a tape recorded in High Sampling Mode (fs = 96kHz or 88.2kHz) is to be played back on the playback deck with a digital copy that was made with an AES/EBU digital signal connection, the digital output rate can be converted down by 1/2 by setting the SW1 DIP SWITCH No. 1 switch to the ON position (Down Converter).

With this function a digital copy of a 48kHz (44.1kHz) sampling tape can be made from a 96kHz (88.2kHz) sampling tape.



NOTE:

- *When search operations are executed in down conversion status, the output data are switched when the mode changes. When digital copying is executed, this can cause the equipment on the recording side to become temporarily unlocked.*



■ COPY ID Selector Switch

The ID (digital copy ID) recorded on the recording tape can be set with the COPY ID switch.
PERMIT ..... "00" (digital copy is permitted) is recorded.
INHIBIT ..... "10" (digital copy is prohibited) is recorded.
ONCE ..... "11" (only first-generation digital copy is permitted) is recorded.

■ Recording AUTO ID When Making a Digital Copy

When the AUTO ID is set to ON during digital copying and the START ID and SKIP ID are sent from the playback deck, the START ID and SKIP ID will be recorded by the recording deck. In this case the ID will not be automatically recorded by detection of the blank portion between songs. (Refer to Page 18.) Such AUTO ID recording is limited to digital copies made in a public-use format using the coaxial terminals of a digital audio interface. In the case of a pro-use format, the START ID is automatically recorded by detection of the blank portion between songs.

SCMS

The Serial Copy Management System is a system of regulating the "number of generations" of digital-signal recordings. At least 1 generation of an original source can be recorded with a digital signal, although this varies depending on the source. With an analog signal connection any number of generations of recordings can be made.

1. Only first-generation digital recording is possible for copy-righted CDs etc.
2. First-generation recordings of tapes made by analog signal input, regardless of the source of the original recording, can be made.

- Items 1 and 2 above may not apply to some tapes recorded with a DAT unit not equipped with the SCMS.

SUBCODE FUNCTIONS

In addition to digital audio signals, a Subcode of related information is also recorded on DAT tapes. Using this Subcode, time data can be displayed and the Program Title and other items can be Searched. The Subcode is automatically recorded when a recording is made, and it can be recorded, rewritten, or erased during playback.

START ID

The mark that indicates the start of each Program (Song).

Program Number

Number that indicates the Program (Song) sequence; recorded in the same place as the START ID.

SKIP ID

The mark that indicates the start point of a designated interval that is skipped in the middle of a Program (Song).

END Mark

The mark that indicates the place where a recording is to end.

Absolute Time (A-TIME)

The time elapsed from the start of a tape. It is recorded over the entire length of the tape. If there is a blank portion somewhere along the tape, correct time data cannot be obtained. The time is displayed based on Standard Mode (fs = 44.1kHz or 48kHz). Real time is 1/2 the time displayed during High Sampling Mode (fs = 96kHz or 88.2kHz).

Program Time (P-TIME)

The time elapsed from the start of each Program (Song).
P-TIME can be displayed because it starts to count from the START ID during Playback - even if there are no Subcode data recorded.

TOC Data (TOC)

TOC is an abbreviation of Table of Contents. These are Table of Contents data that indicate the tape use conditions. With this unit, they are recorded in the same place as the START ID. Consequently, if the tape is not started from the beginning, the TOC data cannot be read.

Character Pack (Character Data)

With this unit, up to 50 letters and numbers can be recorded and read in the START ID of each song.

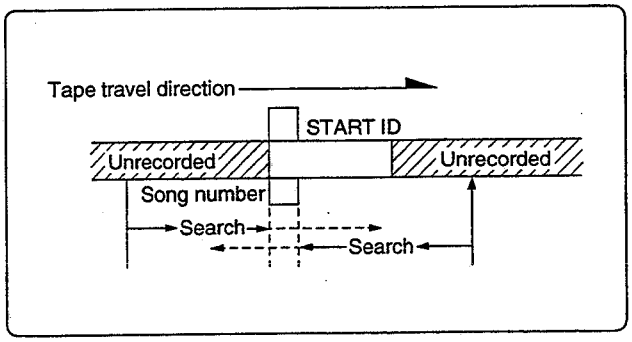
■ Lead-In Area

With this unit, a part at the start of the tape, which is provided to correctly record and read time data, is created by an initialization process. (Refer to "Recording from the Start of the Tape" on Page 13.)
When this part is read, the Program Number is displayed as "bb," and A-TIME is displayed as a negative value.

■ Blank Portions

With an analog-recorded cassette tape, a blank portion recorded on the tape and an unrecorded portion of tape, when played back, are the same. With a DAT tape, however, when a blank portion is recorded, a Subcode and "blank" audio data are recorded, so during Playback dramatically different results are obtained, compared with the playback of an unrecorded tape. And especially if there is an unrecorded portion at some point during a recording, the Subcode will be interrupted, recording of A-TIME will be discontinued, and SEARCH operations will not be correctly performed. Be careful not to create unrecorded portions in the middle of a tape.

NOTE:
When there are unrecorded (unused) portions at both ends of a short song as shown in the figure below, performing a direct song selection or MS or other Search from there may result in failure to detect the START ID or Program Number or Title. Record tapes in such a way that unrecorded portions are not created between songs.
To create a blank portion of any length between songs, use the REC MUTE (O) button during Record. (Refer to Page 15.)



■ ID Recording Time

The following time intervals are needed to record ID data. When ID data are being recorded or erased, no button operation other than that of the STOP (■) button will be accepted.

	Standard Mode (fs = 44.1kHz or 48kHz)	High Sampling Mode (fs =88.2kHz or 96kHz)
START ID	About 9 sec.	About 4.5 sec.
SKIP ID	About 1 sec.	About 0.5 sec.
END mark	About 9 sec.	About 4.5 sec.

RECORDING A START ID

The START ID is a mark that indicates the start of a Program (Song). A START ID can be recorded in the following 3 ways.

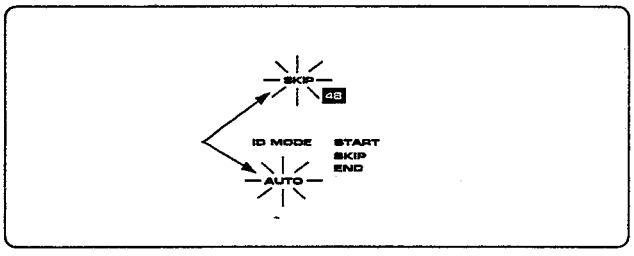
1. Automatically, during Record;
   - Recorded as part of the Record start operation.
   - Recorded after a blank portion between songs is detected.
   - A copy is made with a digital signal connection from a DAT that includes a START ID.
   - Recorded after a digital signal Q-Code is detected.
2. Manually, at any point during Record;
3. Manually, at any point during Playback.

NOTE:

While a START ID is being recorded, no button operation other than that of the STOP (■) button will be accepted.

AUTOMATICALLY RECORDING A START ID DURING RECORD

Press the AUTO ID button, illuminating the AUTO indicator and the SKIP indicator.



■ Automatically recording a START ID with the Record start operation

The START ID and Program Number are automatically recorded by the Record start operation. (Refer to Pages 13 and 14.)

■ Automatically recording a START ID by detecting the blank portion between songs

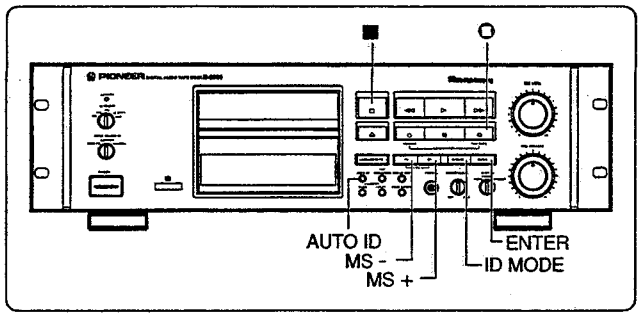
This function works when feeding analog signals as well as digital signals (except for CD and DAT).

When blank conditions (sound below detection level) continue for 2 seconds or more while recording is in progress, the START ID and Program Number will automatically be recorded as soon as the next signal above the detection level enters the unit.

There are 4 START ID Auto Record detection levels (–40, –50, –60, and –70dB) that can be selected. Automatic recording of the START ID is not suitable in the cases described below; change the detection level or press the AUTO ID button, extinguishing the AUTO and SKIP indicators, and record the START ID manually:

(1) when the music contains intervals of low sound levels, such as in the case of classical music;

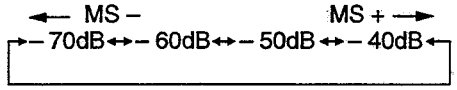
(2) when a part corresponding to the portion between songs contains noise, such as in the case of an analog disc, tuner, or cassette deck.



Selecting the START ID Auto Record Detection Level

When the AUTO ID button is pressed during stop while theREC MUTE (O) button is being pressed, start ID automatic recording detection level switching mode will be reached, and the set detection level will be displayed on the counter display part.

Switching can be done with the MS +, – buttons as shown below.



Level switching mode is cancelled when the STOP (■) button is pressed.

These settings are recorded and stored in the Write Memory, so they are available even when the power is OFF.

When suitable operation is not obtained even after the detection level has been changed, press the AUTO ID button, extinguishing the AUTO indicator, and record the START ID manually.

- At the time of shipping, initial setting has been done to –60 dB.

■ Copying with a Digital Signal Connection from a DAT

If the digital signal from a DAT contains a START ID, it will be recorded in its existing state.

NOTE:

- *If the digital signal from a DAT does not contain a START ID, press the AUTO ID button once, extinguishing the AUTO indicator, and then press the AUTO ID button again and hold it down for at least 4 seconds, causing the AUTO indicator to start flashing. AUTO ID recording by detection of the blank portion between songs will be selected. To return to the original status, press the AUTO ID button, extinguishing the AUTO indicator, and then press it again, illuminating the AUTO indicator. This will be canceled after the power has been turned OFF.*
- *Copying with a digital signal connection from a DAT is limited to digital copies made in a public-use format using the coaxial terminals of a digital audio interface. In the case of a pro-use format, the START ID is automatically recorded by detection of the blank portion between songs.*

■ Recording a Q-Code Synchro Start ID

When recording with a digital signal connection from a compact disc, the Q-Code recorded on the compact disc can be read, and the START ID can be correctly recorded even if there is no blank portion between songs. Since this function recognizes that the sending unit is a compact disc and operates automatically, no special operation is needed.

NOTE:

- *Some CD Players may not send a Q-Code in the digital signal. In such a case, this function will not operate normally.*
  In a case such as this, press the AUTO ID button once, extinguishing the AUTO indicator, and then press the AUTO ID button again and hold it down for at least 4 seconds, causing the AUTO indicator to start flashing. AUTO ID recording by detection of the blank portion between songs will be selected. To return to the original status, press the AUTO ID button, extinguishing the AUTO indicator, and then press it again, illuminating the AUTO indicator. This will be canceled after the power has been turned OFF.
- *Q-code synchro start ID recording is limited to digital copies in a public-use format using the coaxial terminals of the digital audio interface. At the time of a professional format, automatic start ID recording using detection between tracks will be executed.*

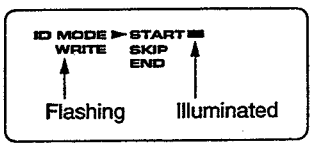
MANUALLY RECORDING START ID DURING RECORD

- When a Program Number is displayed, this unit will record the Program Number together with the START ID, starting from the subsequent number.
  If a Program Number is not displayed, only the START ID will be recorded.

1. Press the AUTO ID button, extinguishing the AUTO and SKIP indicators.

2. Press the ID MODE button and select "WRITE ► START."

3. Press the ENTER button at the place you want to record the START ID.



NOTE:

- *Leave at least 30 seconds of A-TIME between one START ID and the next START ID. If the ID gap is small, Search and other operations may not function normally.*

MANUALLY RECORDING A START ID DURING PLAYBACK

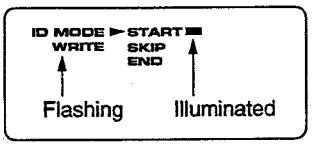
- During Playback a START ID can be recorded at any place (on the tape).

1. Press the ID MODE button and select "WRITE ► START."

2. Press the PLAY (►) button and start Playback just before the place where you want the START ID recorded.

- By using FINE CUE/REVIEW (refer to Page 25), you can set the recording location more accurately.

3. Press the ENTER button at the place you want to record the START ID.



- The START ID recording time (when fs = 44.1kHz or 48kHz) is about 9 seconds. At this time Playback cannot be heard.
- When a START ID is manually recorded during Playback, the Program Number will not be recorded. After the START ID has been recorded, carry out a RENUMBER operation (refer to Page 20).

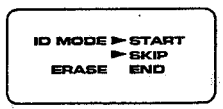
NOTE:

- *A START ID cannot be recorded on a cassette tape that has Subcode-erase protection. (Refer to Page 6.)*
- *Leave at least 30 seconds of A-TIME between one START ID and the next START ID. If the gap between IDs is too small, Search and other operations may not function normally.*

ERASING A START ID

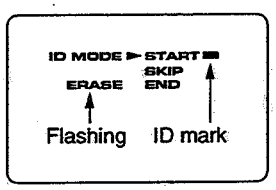
- An unnecessary START ID can be erased during Playback (or during STOP status).

1. Press the ID MODE button and select "ERASE ► START/ ► SKIP."



2. Press the PLAY (►) button and start Playback just before the START ID you want to erase.

3. Press the ENTER button at the point where the ID mark lights up or where it goes out.



- After returning to the beginning of the START ID, ERASE operation will be executed.
- The ERASE indicator flashes during an ERASE operation, and Playback cannot be heard.
- After a START ID has been erased, perform a RENUMBER operation (refer to Page 20), and continue the Program Number sequence.

NOTE:

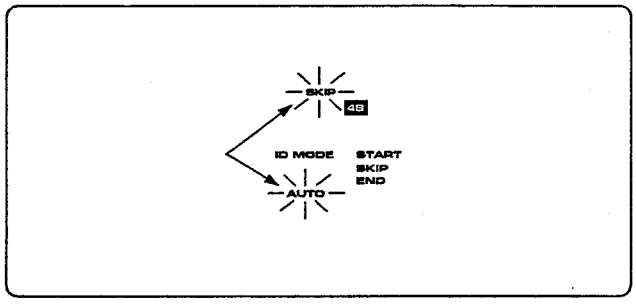
- *An ERASE operation cannot be performed with an erase-protected cassette tape. (Refer to Page 6.)*
- When recording a Subcode or performing an ERASE operation, no button operation other than that of the STOP (■) button will be accepted.

RECORDING PROGRAM NUMBERS

Program Numbers indicate the sequence of Programs (Songs) and are recorded in the same place as the START ID.

RECORDING A PROGRAM NUMBER AUTOMATICALLY DURING RECORD

Press the AUTO ID button, illuminating the AUTO indicator and the SKIP indicator.



■ Recording from the Start of the Tape

Program Numbers are recorded in order from 1 to 99, accompanying the automatic recording of the START ID.

■ Recording from an Intermediate Point on the Tape

- The Program Number is automatically set and recorded along with the automatic recording of the START ID, provided that the Program Number is displayed.
- If the Program Number is displayed as "– –" a Program Number needs to be designated. If not designated, the Program Number will be 01.

■ Designating a Program Number (Remote Control Operation Only)

- This function operates during Record Standby status only.

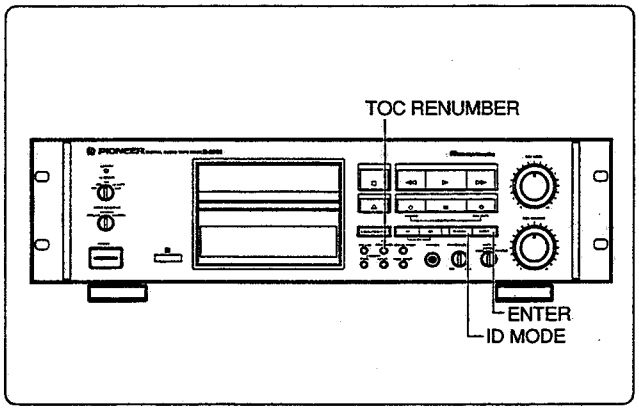
1. Select "WRITE ► START" with the ID MODE button.

2. Input the Program Number with the digit buttons.

- Press a digit button. For a 2-digit number, press the digit buttons twice.

3. Press the PLAY (►) button.

- Recording will start.



RENUMBERING PROGRAM NUMBERS (RENUMBER)

When additions and deletions are made to the START ID and cassette tapes are re-recorded, Program Numbers may become duplicated or omitted, and Subcodes may not be able to be used correctly. The RENUMBER operation adjusts the Program Numbers according to the START ID, in order from the start of the tape.

Press the TOC RENUMBER button during STOP status.

- The RENUM indicator will be illuminated and RENUMBER operation will commence.
  (1) The tape is rewound.
  (2) While each song is Searched, Program Numbers are re-written in order.
  (3) Once all Program Numbers have been re-written, the tape is rewound and STOP status is engaged.
- Playback cannot be heard during a RENUMBER operation.
- If the Program Number exceeds 99, only the START ID will be recorded from that point on.

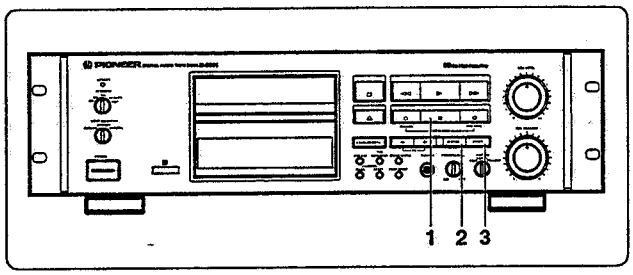
NOTE:

- *A RENUMBER operation cannot be performed with an erase-protected cassette tape. (Refer to Page 6.)*
- *When a RENUMBER operation is being performed, no button operation other than that of the STOP (■) button will be accepted.*

RECORDING AN END MARK

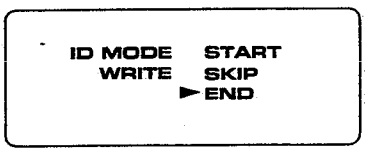
The END mark indicates the point where a recording ends. With a new tape, since nothing is recorded beyond the point where the recording ends, the location of the end of a recording can be known by finding the unrecorded portion by carrying out a BLANK SEARCH operation. In the case of re-recording, since a DAT records over a previous recording without having to erase it first, the end of the recording does not border on the unrecorded portion, so the location of the end of the recording is not known. If an END mark is recorded and the recording is continued on the same tape, the previous end of recording can be quickly located.

RECORDING AN END MARK DURING RECORD



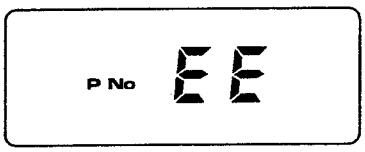
1. Press the PAUSE (II) button and engage Record Standby (PAUSE) status.

2. Press the ID MODE button and select "WRITE ► END."



- Selection can be made during Record or Record Standby status, but not during STOP status.

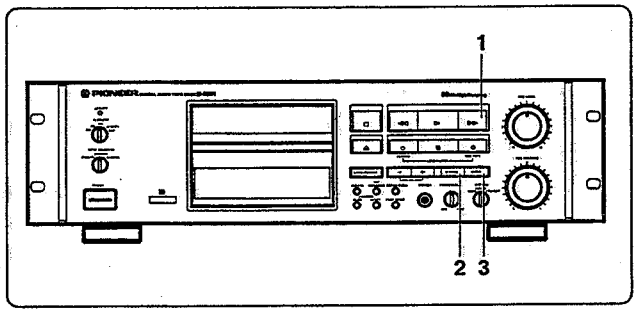
3. Press the ENTER button.



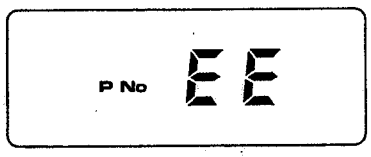
- After an END mark is recorded for about 9 seconds (when fs = 44.1kHz or 48kHz), operation returns to the start of the END mark.

ERASING AN END MARK

An END mark is erased after an END SEARCH has been performed, provided that a Record operation has been started. But it can also be erased in the following manner.

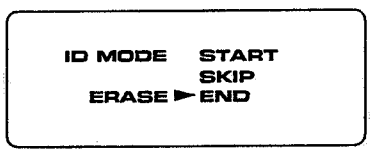


1. Press the FAST FORWARD (►►) button.

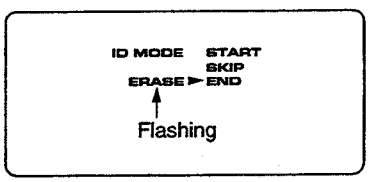


- An END SEARCH is performed, and once the END mark has been detected, the Program Number will be displayed as "EE" and STOP status will be engaged.

2. Press the ID MODE button and select "ERASE ► END."



3. Press the ENTER button.



- The ERASE indicator flashes during an ERASE operation.

NOTE:

- *An ERASE operation cannot be performed with an erase-protected cassette tape. (Refer to Page 6.)*

- When recording a Subcode or performing an ERASE operation, no button operation other than that of the STOP (■) button will be accepted.

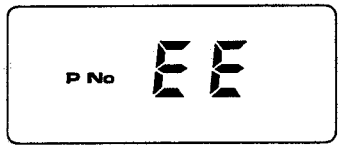
RECORDING A TOC

TOC is an abbreviation for Table of Contents, and it indicates the tape use conditions. With this unit, the data of up to 50 songs can be recorded, and these data are recorded in the same place as the START ID.

RECORDING A TOC (TOC RENUMBER)

A TOC is recorded, following a RENUMBER operation.

1. Insert a cassette tape and press the FAST FORWARD (►►) button and carry out an END SEARCH.
Or right after an END mark has been recorded at the end of a recording (when the Program Number is displayed as "EE"):

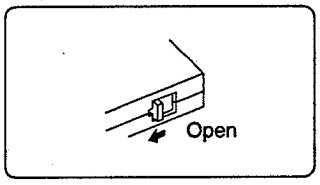


2. Press the TOC RENUMBER button.

- The RENUM indicator will light, the TOC indicator will flash, and RENUM operation and TOC recording will commence.
  (1) The tape is rewound.
  (2) While each song is Searched, Program Numbers are re-written in order.
  (3) Once all Program Numbers have been re-written, Program 1 is Searched.
  (4) A TOC is recorded on the Program 1 START ID.
  (5) The tape is rewound to the start.
  (6) A-TIME is displayed.

3. Press the OPEN/CLOSE (▲) button and remove the tape.

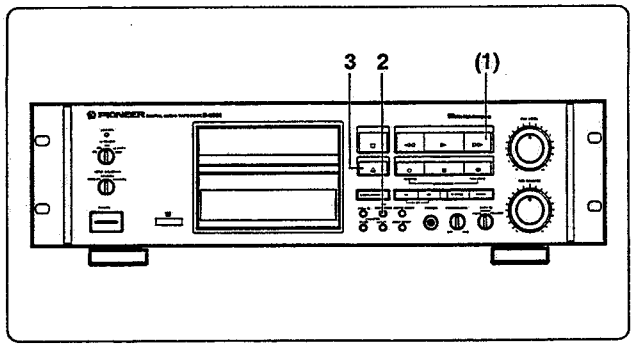
4. Close the erase prevention door on the cassette tape.



- This is needed to protect the TOC data.

NOTE:

- *TOC data cannot be recorded on an erase-protected cassette tape.*
- *In the case of a tape that does not have A-TIME continuously recorded, or if A-TIME is recorded but there are no END marks recorded, TOC data cannot be recorded and only a RENUMBER operation is possible.*
- *When a TOC RENUMBER operation is in progress, no button operation other than that of the STOP (■) button will be accepted.*



READING AND DISPLAYING TOC DATA

With this unit, since the TOC data are recorded in the same place as the START ID, the TOC data can be read provided that Program 1 is played back. Once the TOC is detected, the TOC indicator starts to flash; once the TOC data are read, the indicator stops flashing but remains illuminated.

■ TOC Data Display

- Pressing the COUNTER MODE button will cause the TOTAL display (total number of songs and total time) to appear. After about 4 seconds, the A-TIME display will reappear. (Refer to Page 10.)
- The performance time of each Program (Song) can be displayed by repeatedly pressing the CHECK button when P-TIME is displayed during STOP status.
- The performance time of each Program (Song) can be displayed in order by continually pressing the CHECK button on the remote control during STOP status when A-TIME is being displayed.
- If the PLAY (►) button is pressed when the data of each program are being displayed, that program will be searched and played back.
- The TOC indicator flashes at the time of CHECK mode. CHECK mode is cancelled when the STOP (■) button is pressed.
- Real time is the same as the time displayed during Standard Mode (fs = 44.1kHz or 48kHz) and 1/2 the time displayed during High Sampling Mode (fs = 96kHz or 88.2kHz).

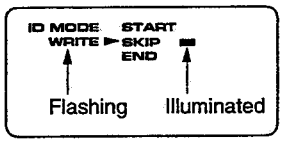
RECORDING A SKIP ID

A SKIP ID is a mark that indicates the start point of a designated interval that is skipped in the middle of a Program (Song).
When the AUTO ID button is pressed and the AUTO indicator is illuminated, the tape will scan to the next START ID (the start of the next song) during Playback - if a SKIP ID has been recorded on the tape - and Playback will resume.

RECORDING A SKIP ID DURING RECORD

1. Press the ID MODE button and select "WRITE ► SKIP."

2. Press the ENTER button at the place where you want to record the SKIP ID.



- The SKIP ID recording time is about 1 second.

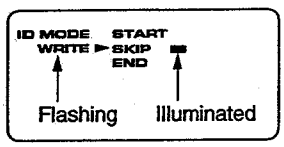
RECORDING A SKIP ID DURING PLAYBACK

1. Press the ID MODE button and select "WRITE ► SKIP."

2. Press the PLAY (►) button.

- Playback will start just before where you want to record the SKIP ID. If Playback starts ahead of this spot, press the REWIND (◄◄) button.
- By using FINE CUE/REVIEW (refer to Page 25), you can set the recording location more accurately.
- Since the START ID Recording Mode is automatically entered after a SKIP ID has been recorded, recording can be continued without interruption from the end of the SKIP.

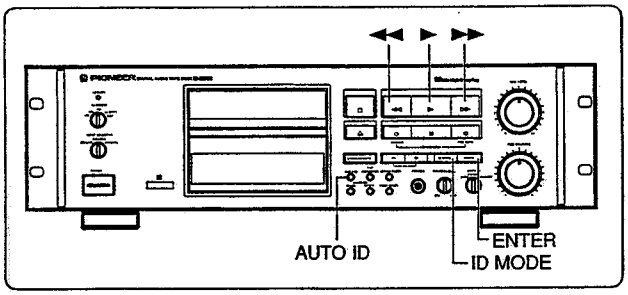
3. Press the ENTER button at the place you want to record the START ID.



- The SKIP ID recording time is about 1 second (when fs = 44.1kHz or 48kHz). At this time Playback cannot be heard.

NOTE:

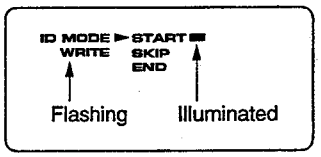
- *The SKIP ID cannot be recorded on an erase-protected cassette tape. (Refer to Page 6.)*



ERASING A SKIP ID

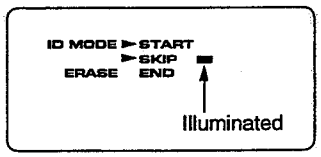
1. Press the AUTO ID button, illuminating the AUTO SKIP indicator.

2. Press the ID MODE button and select "ERASE ► START/ ► SKIP."



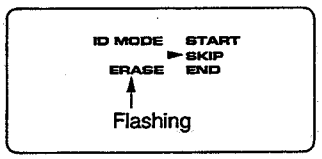
3. Search for the SKIP ID.

- Search for the SKIP ID with the CUE/REVIEW function and press the PLAY (►) button just before the SKIP ID and engage Playback status.
- Once the ID has been detected, the ID mark (■) will be illuminated.



4. Once the ID mark has been illuminated, press the ENTER button.

- After returning to the beginning of the SKIP ID, ERASE operation will be executed.

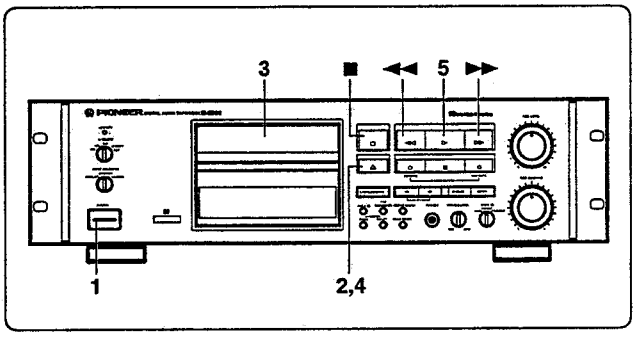


NOTE:

- *The SKIP ID cannot be erased from an erase-protected cassette tape. (Refer to Page 6.)*
- *During an ERASE operation, Playback cannot be heard.*

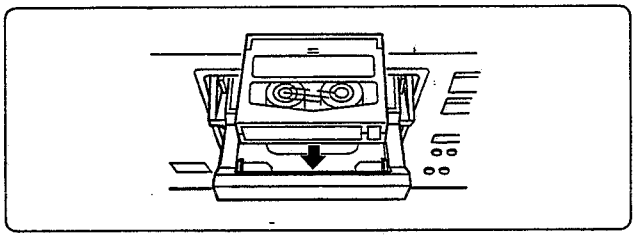
PLAYBACK

EXECUTING PLAYBACK



1. Turn the POWER switch ON.
2. Press the OPEN/CLOSE (▲) button.
- The cassette tray will slide out.

3. Insert a cassette tape.
- Place the cassette tape gently on the tray, with the tape surface you can see facing up.



4. Press the OPEN/CLOSE (▲) button.
- The cassette tray will close.
- The cassette tray will also close if the REWIND (◄◄) button, STOP (■) button, PLAY (►) button, or FAST FORWARD (►►) button is pressed.

5. Press the PLAY (►) button.
- Playback will start.

■ Pausing Playback
Press the PAUSE (II) button.
- To resume Playback, press the PLAY (►) button or PAUSE (II) button.
- If PAUSE status continues for about 5 minutes, stop condition will be reached automatically in order to protect the tape.

■ Terminating Playback
Press the STOP (■) button.
- The END mark will be searched and STOP status will automatically be engaged.

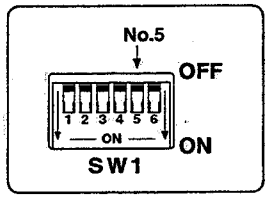
NOTES:
- *This unit does not correspond to LP mode.*
- *The digital output at the time of HS mode (fs = 96 kHz, 88.2 kHz) becomes SP mode during search operations (48 kHz at the time of 96 kHz, 44.1 kHz at the time of 88.2 kHz).*

■ FAST FORWARD (►►) Button and REWIND (◄◄) Button
- If the FAST FORWARD (►►) button is pressed during STOP status, the tape will fast-forward.
- If the REWIND (◄◄) button is pressed during STOP status, the tape will rewind.
- If either button is pressed twice, the winding speed will increase; if it is pressed again, the original speed will be resumed.
- When an END mark or unused portion is detected, STOP status will be engaged (END SEARCH function/BLANK SEARCH function).

AUTO REWIND Function
When the tape is wound to the end, it will automatically rewind to the start.

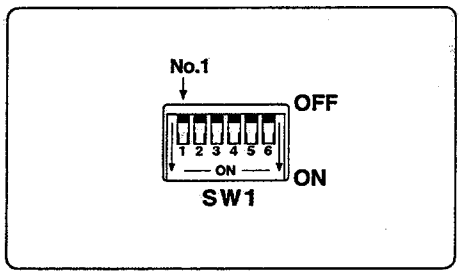
SELECTING THE LEVEL OF THE OUTPUT SIGNAL

The output signal level of the standard recording level can be changed.
Set the level with the SW1 DIP Switch No. 5 switch on the Rear Panel (facing the Rear Panel, the 5th switch from the left in the left set of DIP Switches).
OFF (upper position) : +4dBu
ON (lower position) : -10dBv

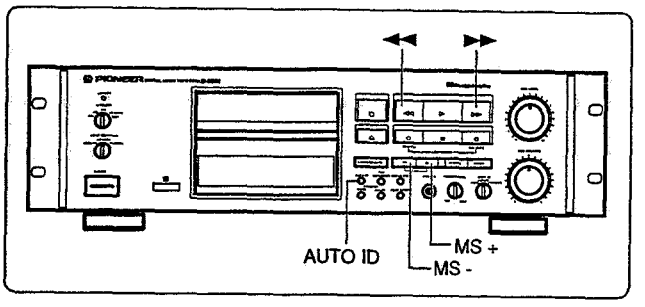


DIGITAL OUTPUT DOWN CONVERTER (AES/EBU Terminal Only)

The sampling frequency of 96kHz or 88.2kHz of a digital signal in High Sampling Mode can be converted to 48kHz or 44.1kHz and then be output. This is performed by setting the SW1 DIP Switch No. 1 on the Rear Panel (facing the Rear Panel, the last switch on the left in the left set of DIP switches).
OFF (upper position) : No conversion
ON (lower position) : fs = 96kHz converts to fs = 48kHz
(fs = 88.2 kHz converts to 44.1 kHz.)



NOTE:
- *An IEC958/RCA terminal will not output a converted signal.*
- *A digital signal of fs = 44.1kHz or 48kHz will not be converted.*



SEARCH WHILE LISTENING TO PLAYBACK

■ CUE Operation

- When the FAST FORWARD (►►) button is pressed during Playback, Playback will continue at 3 times normal speed; if the button is held down, Playback will continue at 5 times normal speed; and if the button is released, Playback will return to 3 times normal speed.
- When the FAST FORWARD (►►) button is pressed during Playback PAUSE status, Playback will continue at 1/2 speed (when fs = 44.1kHz or 48kHz) while the button is depressed; when the button is released, PAUSE status will be resumed (FINE CUE operation). In High Sampling Mode (fs = 96kHz or 88.2kHz), CUE operation is performed at normal speed.

■ REVIEW Operation

- When the REWIND (◄◄) button is pressed during Playback, Playback will continue at 3 times normal speed in reverse direction; if the button is held down, Playback will continue at 5 times normal speed; and if the button is released, Playback will return to 3 times normal speed.
- When the REWIND (◄◄) button is pressed during Playback PAUSE status, Playback will continue at 1/2 speed (when fs = 44.1kHz or 48kHz) in reverse direction while the button is depressed; when the button is released, PAUSE status will be resumed (FINE REVIEW operation). In High Sampling Mode (fs = 96kHz or 88.2kHz), REVIEW operation is performed at normal speed.

NOTE:

• The sound quality at the time of CUE/REVIEW operation is impaired in comparison to normal playback.

SKIP PLAY OPERATION

- When a SKIP ID (mark denoting a spot you want to skip) is detected during Playback, the tape will fast-forward to the next START ID (mark denoting the start of a song), where Playback will resume.
- Record a SKIP ID according to the instructions given on Page 23.

1. Press the AUTO ID button, illuminating the AUTO and SKIP indicators.

2. Press the PLAY (►) button.

- While the SKIP indicator is illuminated, a SKIP will not be performed even if a SKIP ID is detected.

MUSIC SEARCH (MS)

During STOP, Playback, or PAUSE status, only reading of Program titles is possible.

- When a song is selected during PAUSE status, PAUSE status will be restored after the SEARCH operation has ended.

■ To Hear the Same Song Again

Press the MS button.

For example, if you want to replay Song 3, press the button 4 times (the number of the song you want to hear again plus 1); "-4" will be indicated on the display.

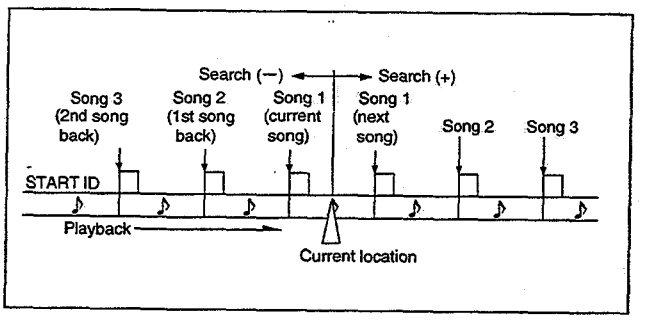
■ To Hear a Subsequent Song

Press the MS button.

For example, if you want to hear the 3rd song ahead of the current song you are listening to, press the button 3 times. ("+3" will be displayed.)

Counting Song Numbers

- When a Music Search is performed during the performance of a song, if Song 1 is designated, Playback will go back to the start of the song you are currently listening to. If you want to return to a previous song, designate one number higher than the number of the song you want to hear.



REMOTE CONTROL OPERATIONS

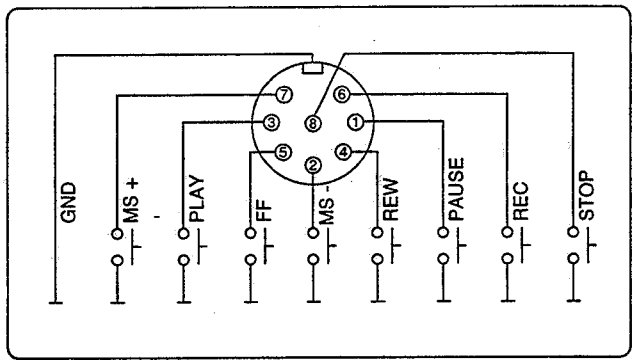
This unit can be operated with an 8-pin parallel remote control input terminal, an RS-422 serial remote control, or the accessory Wireless Remote Control.

8-PIN PARALLEL REMOTE CONTROL INPUT TERMINAL (DIN 8-pin)

By connecting the circuit shown below, this unit can be operated by remote control with its normal switches.

NOTE

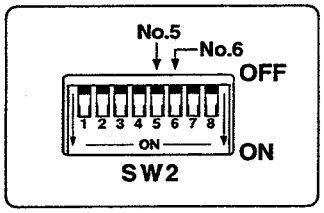
Operation is only possible if the LOCAL/REMOTE Selection switch is set in the REMOTE position (KEY LOCK indicator (▮▮▮▮) is illuminated in the display part). (Refer to Page 7.)



RS-422 SERIAL REMOTE CONTROL (D-Sub 9-Pin)

Control from an editing machine according to the SONY 9-pin protocol or control from a computer by ES bus (ESC mode) is possible.

For operation according to the SONY 9-pin protocol, set No. 5 of the DIP switch SW2 on the rear panel to OFF. When this switch is set to ON, operation by ES bus will be executed.



■ In regard to the ES bus

Several DATs can be controlled by a single controller. An automation system for operation of this unit according to the application can be created by developing control software with a computer etc.

- The ES bus uses ESC mode, and the message format uses the SONY 9-pin protocol.

NOTE:

Operation is only possible if the LOCAL/REMOTE Selection switch is set in the REMOTE position (KEY LOCK indicator (▮▮▮▮) is illuminated in the display part). (Refer to Page 7.) In this case, operation with the operation buttons on the panel or with the Wireless Remote Control or parallel remote control is not possible.

This unit has the following 2 RS-422 remote control terminals.

■ RS-422 Input Terminal (RS-422 IN)

This is used when control is performed from the editor, etc. It is used in the following 2 modes according to the setting of the SW2 DIP Switch No. 6 switch (return line).

ON: Status is not returned from the unit (EXTERNAL)

OFF: Status is returned from the unit (INTERNAL)

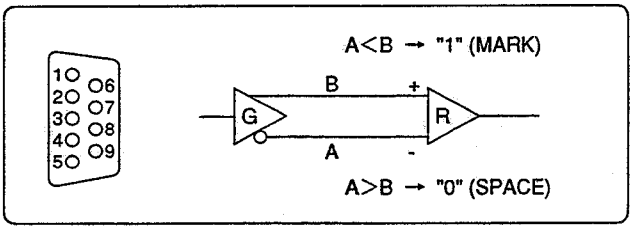
■ RS-422 Output Terminal (RS-422 OUT)

This is used when several units, including this unit, are controlled with the same command. A command to the input terminal will be put through to the output terminal.

NOTE:

When several units are connected, only one unit will return the status.

Terminal Pin Layout and Input Signal

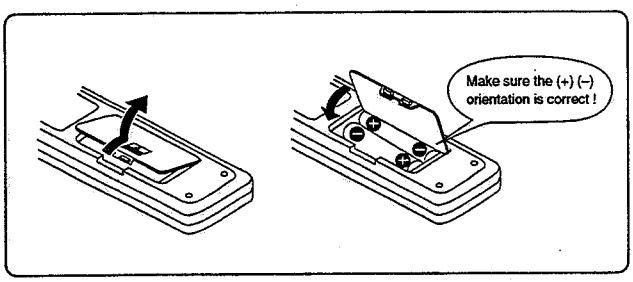


Pin number	Signal
1	FRAME GROUND
2	TRANSMIT A
3	RECEIVE B
4	TRANSMIT COMMON
5	SPACE
6	RECEIVE COMMON
7	TRANSMIT B
8	RECEIVE A
9	FRAME GROUND

WIRELESS REMOTE CONTROL

■ Inserting Batteries into the Remote Control

1. Open the lid on the back of the remote control. Insert the batteries into place, making sure the (+) (–) orientation is correct.
2. Close the lid.



NOTE:

- *If the remote control is not used for a long time (1 month or longer), remove the batteries to prevent leakage of fluid from the battery. If leakage occurs, carefully clean away all fluid from the inside of the case before installing new batteries.*
- *Do not place a book or other object on top of the remote control. Buttons may be continually pressed down, resulting in depletion of the batteries.*

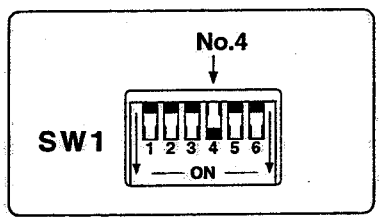
FOR SAFETY'S SAKE !

Improper use of batteries may result in leakage or damage, so special consideration should be given to the following points.

- Insert the batteries so that the direction of the (–) (+) poles is the same as that indicated inside the battery case.
- Do not use new batteries together with partially used batteries.
- Batteries that have the same shape do not always have the same voltage. Do not use different types of batteries together.
- Batteries come in rechargeable and non-rechargeable types. Check the battery type and use the batteries correctly.

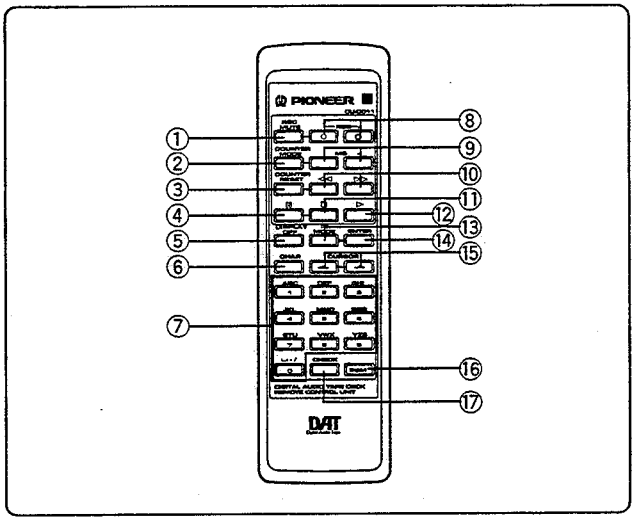
■ Setting for wireless remote control prohibition

For prohibition of the accessory wireless remote control of this unit, set No. 4 of the DIP switch SW1 on the rear panel to ON. When this switch is set to OFF, operation with the wireless remote control is possible.



■ Operating the Remote Control

* Buttons on the remote control that have the same names as those on the unit perform the same corresponding functions.



① REC MUTE button (O)
② COUNTER MODE button (COUNTER MODE)
③ COUNTER RESET button (COUNTER RESET)
④ PAUSE button (II)
⑤ DISPLAY OFF button (DISPLAY OFF)

When this button is pressed, the display window is extinguished. By stopping the operation of the display circuit, influences on the sound quality are prevented. Pressing the button again restores the original status.

⑥ CHARACTER button (CHAR)

Used to record/display character data.

⑦ Digit buttons (0 – 9)

In Character Input Mode, the 3 letters displayed above each button will also change in sequence.
Example) With the Digit 1 button:
A → B → C → 1 → A →...

⑧ RECORD button (● REC)

Press 2 buttons simultaneously.

⑨ MUSIC SELECTION button (MS – / +)
⑩ REWIND and FAST FORWARD buttons (◀◀, ▶▶)
⑪ STOP button (■)
⑫ PLAY button (▶)
⑬ ID MODE button (ID MODE)
⑭ ENTER button (ENTER)
⑮ CURSOR Movement buttons (CURSOR)

→ : LEFT button
Shifts to the left during character input.
← : RIGHT button
Shifts to the right during character input.

⑯ PROGRAM button (PGM)

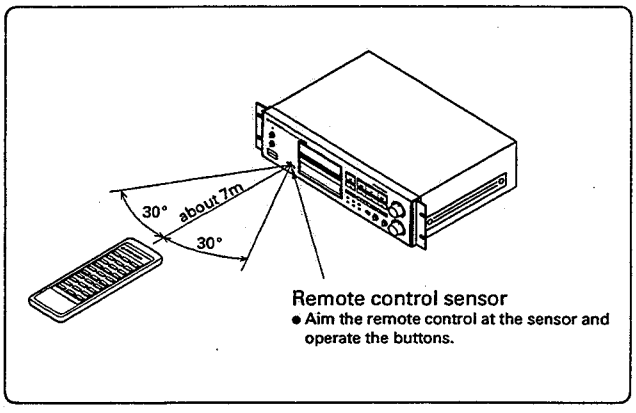
This is used when the one-point memory function is used.

⑰ CHECK button (CHECK)

Used to confirm the TOC data , to select songs directly using the TOC or to the one-point memory operation.

■ Remote Control Operation Range

To operate, the remote control must be aimed within 30° to the right or left of the sensor part on the unit, and it cannot be more than 7m (23ft) away from the unit. This range may vary, depending on the surrounding conditions or the state of wear of the batteries.



NOTE:

- *The remote control may not operate if there is an obstruction between it and the unit or if it is aimed at a bad angle to the sensor on the unit.*
- *Faulty operation may occur if the remote control sensor is exposed to a strong light such as direct sunlight or fluorescent light.*
- *The unit may not operate properly if it is used near a device that emits infrared rays or if another remote control that uses infrared rays is used. Conversely, if this remote control is used when another appliance controlled by infrared rays is being used, that appliance may not operate normally.*
- *When the operation range of the remote control decreases, replace the batteries in the remote control.*
- *If the remote control is not used for a long time (1 month or longer), remove the batteries to prevent leakage of fluid from the battery.*

The following functions can be performed with the Wireless Remote Control.

VARIOUS SEARCH FUNCTIONS

■ Direct Music Selection

Direct Music Selection can be performed during STOP, Playback, or PAUSE status.

1. Using the digit buttons (0 – 9), enter the number of the Program you want to play back.

- For a 2-digit Program Number, press the digit buttons twice.

2. Press the PLAY (►) button.

- The designated Program Number will be Searched and played back.
- When a Music Selection is made during PAUSE status, PAUSE status will be restored after the Search is completed.
- In the case of Playback or PAUSE status, the Music Selection will be canceled unless the PLAY (►) button is pressed within 4 seconds after the Music Selection has been made with the digit buttons.

NOTE:

Music Selection cannot be correctly performed with a tape on which the Program Number has been incorrectly recorded. When re-recording has been performed or when a START ID has been added or erased, re-record the correct Program Number, using the RENUMBER operation. (Refer to Page 20.)

High-Speed AI (Artifical Intelligence) Search

When the TOC data have been read - (for details regarding reading and displaying TOC data, refer to Page 22) - and Playback has been carried out for about 20 seconds, and after the internal operations have been completed, a Search speed about 300 times normal speed becomes enabled and AI SEARCH can be engaged (up to Program Number 50). When this unit reads the program numbers recorded on the tape, it remembers their positions, and afterwards AI search is executed (up to Program Number 40). Normal Search speed is about 200 times normal speed. During AI SEARCH the PLAY (►) indicator flashes at a high speed.

NOTE:

- *Time is not displayed during high-speed AI SEARCH.*
- *High-speed AI SEARCH cannot be carried out if the AUTO ID button is ON.*

■ Music Selection Skip Operation

A Music Selection Skip operation can be performed during STOP, Playback, or PAUSE status. Any song up to Song 9 in the + direction and in the – direction can be skipped.

1. Using the digit buttons (0 – 9), enter the Program Number you want to skip.

2. When you select a song subsequent to the current song, press the MS + button. When you return to a previous song and make a Music Selection, press the MS – button.

- The designated Program Number will be skipped and Playback will continue.
- When a selection is made during PAUSE status, PAUSE status will be resumed after the selection has been skipped.
- The designated song number will be canceled during Playback or PAUSE status unless the MS + button or MS – button is pressed within 4 seconds after the number of the song to be skipped has been entered with the digit buttons.

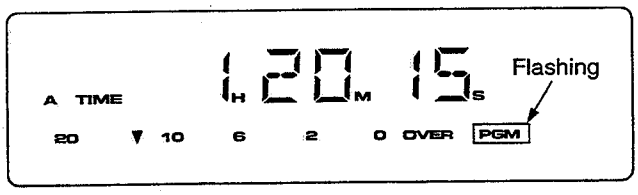
ONE-POINT MEMORY

This is the function for memorizing any point on the tape and executing search for this point and playback by one touch.

■ Memorizing

When the PGM button is pressed in STOP, PLAY, or PAUSE mode, the point at which the button has been pushed will be memorized. At this time, the PGM indication flashes.

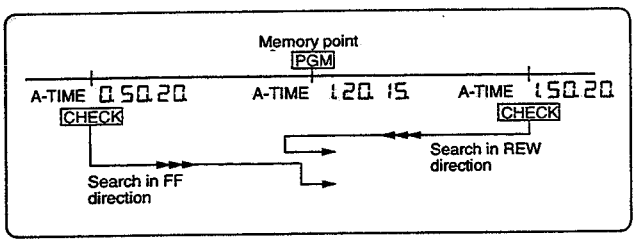
Example: Memorizing the point A-TIME 1 hour, 20 minutes, 15 seconds



■ Search playback

When the CHECK button is pressed in STOP, PLAY, or PAUSE mode, search for the memorized point will be started.

Example: When the CHECK button is pressed with A-TIME 1'50"20 and when the CHECK button is pressed with A-TIME 0'50"20



The memorized point is cleared by pressing the PGM button once more. During stop, it will also be cleared by pressing the STOP (■) button.

NOTE:

- *One-point memory is not possible when the A-TIME has not been recorded or when "bb" is displayed at the program number.*
- *As this unit has a memory in units of seconds, high-accuracy search down to individual frames is not possible.*

RECORDING CHARACTER DATA (Character Pack Function)

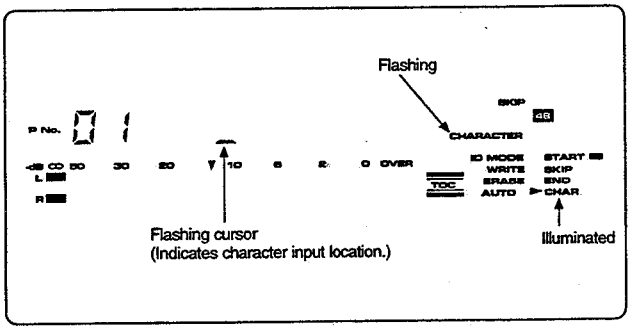
This unit can record song titles and other character data in the START ID (start of each song). (Up to 60 characters can be recorded in each START ID.)
When these data are read during Playback, the characters will be scrolled (from right to left) in the Counter display part. Moreover, since the read data are stored in memory, they can be redisplayed through a button operation.When the next START ID is read, however, the previous memory data will be erased.

■ Recording Procedure

1. Stop the tape at the START ID where you want to record the character data.

2. Press the CHAR button.

- Character Input Mode will be engaged.
- Return to character mode also will be made when the COUNTER MODE button is pressed while the MUTE (O) button on the panel of the unit is being pressed.



NOTE:

- *In the case of an erase-protected tape, Character Input Mode can be engaged, but data cannot be recorded.*
- *If the CHAR button is pressed once more, this mode will be exited and the Counter display will be restored.*

3. Input of characters.

- Buttons to be used for input

CURSOR (←) button (REW (◀◀) button on the panel of the unit)
Shifts to the left during character input.

CURSOR (→) button (FF (▶▶) button on the panel of the unit)
Shifts to the right during character input.

MS + button
Displays the "Characters that Can Be Recorded," which are shown below, from the left to the right in order.

MS – button
Displays the "Characters that Can Be Recorded," which are shown below, from the right to the left in order.

[Characters that Can Be Recorded]

→ABCDEFGHIJKLMNOPQRSTUVWXYZ&'()*+ – /0123456789␣←
(Space)

Digit Buttons

In addition to numbers, the 3 letters shown above each button can be displayed in order when Character Input Mode is engaged.

Example) Using the Digit 1 button:

A → B → C → 1 → A → ...

- **Checking the characters input**

Press the CHECK button.

- The characters that have been input will be scrolled from right to left.
- Scrolling can be stopped by pressing the CHECK button once more.
- When the STOP (■) button is pressed while the characters are being scrolled, scrolling will stop at the start of the character data.

- **Deleting input characters (Clearing characters)**

When the STOP (■) button is pressed during Character Input Mode, all characters that have been input will be deleted.

4. Press the ENTER button.

- After the characters you want recorded have been input in Character Input Mode (CHARACTER indicator is flashing), pressing the ENTER button records the character data in the START ID at the beginning of the song where the tape is currently stopped, and normal Playback is engaged.
- The ENTER button will be accepted even during Scroll display (CHECK display).

NOTE:

- *Recording new data on a previously recorded START ID will erase the previous character data.*
- *Recording character data on a START ID that contains TOC data will not erase the TOC data.*

■ Reading Character Data

① When a tape on which character data have been recorded according to the above procedure is played back, the microcomputer reads the data and stores them in memory.

② When the data are stored, the CHARACTER indicator is illuminated, and when AUTO ID is ON (AUTO indicator lit), the character data will be scrolled and displayed once.

③ When the character data in one START ID are stored in memory, reading the character data of the next START ID will erase the previous data.

④ When the CHAR button is pressed while the CHARACTER indicator is flashing during tape Playback, the character data memory will be scrolled and displayed once. If you want to stop the Scroll display, press the CHAR button again.

NOTE:

- *Pressing the COUNTER MODE button while the MUTE (O) button is being pressed has the same effect as pressing the CHAR button.*
- *The character data memory will be cleared when the power is turned ON or when the cassette tray is OPEN.*

■ Canceling Character Data Display

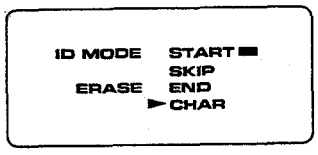
When the AUTO ID button is pressed, extinguishing the AUTO indicator, the CHARACTER indicator will be illuminated, but the character data will not be scrolled even though they will be read and kept in memory.

■ Erasing Character Data

Character data recorded in a START ID can be erased by performing the following procedure.

1. Stop the tape at the START ID in which the character data you want to erase are recorded.

2. Press the ID MODE button and select "ERASE ► CHAR."



3. Press the ENTER button.

- Only the character data will be erased; the START ID data will remain as they are.

NOTE:

- *When a START ID is erased (refer to Page 19), the character data in that ID will also be erased.*
- *After character data have been recorded, they will not be erased when a "RENUMBER" or "TOC" is recorded.*

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom		Cause and Remedy
Power	The power does not turn on.	The power cord is not plugged in.
		The line voltage selector switch is not set correctly. (See "LINE VOLTAGE SELECTOR SWITCH" on the front cover.)
		The component that the power cord is plugged into (amplifier, audio timer, etc.) is not turned on.

Playback not possible	The counter display does not move.	No tape is loaded.
	OK ↓	The deck is in pause mode.
	The level meter does not move.	An unrecorded tape is being played.
	OK ↓	The heads are dirty. (See "Cleaning tape heads" on page 4.)
	Stereo amplifier operation check.	The amplifier is not set for DAT (TAPE) playback.
	OK ↓	The amplifier's volume control is turned all the way down.
	Connection check.	Check for a connection mistake, a loose or disconnected cord, poor connection contacts, or a broken wire.

Recording not possible	The recording (REC) indicator does not light.	You are using an erase-protected tape. General tapes → Close the erase protection door. Prerecorded music tapes → Recording is not possible.
	OK ↓	
	The level meter does not move.	The INPUT SELECTOR switch is set incorrectly.
		The recording level (REC LEVEL) control is turned all the way down.
		The amplifier is not outputting the recording signal (from the tuner, CD, etc.)
		Check for a connection mistake, a loose or disconnected cord, poor connection contacts, or a broken wire.
	OK ↓	
	The counter does not move.	The deck is in pause mode.
	OK ↓	
	The heads are dirty.	Clean the heads. (See "Cleaning tape heads" on page 4.)

- When REMOTE mode has been selected with the LOCAL/REMOTE selector button, the operation buttons on the panel of the unit, the parallel remote control, and the wireless remote control will not function. (Refer to page 7.)
- When the SW1 DIP Switch No. 4 is set to ON, operation with the Wireless Remote Control is not possible. (Refer to Page 12.)

TROUBLESHOOTING

Symptom		Cause and Remedy
Sound distortion	Sound distortion during CUE or REVIEW operation.	———
	No sound distortion with other recorded tapes.	The recording level was too high.
		The recorded signal itself was distorted.
	Sound distortion with other recorded tapes as well.	Another component in your system is distorting the sound.
		The heads are dirty. (See "Cleaning tape heads" on page 4.)
Direct search	Programs(Songs) are not played in the designated sequence.	• The Start-IDs and Song numbers are not recorded correctly. • There is an unrecorded blank area between Songs.
	Stops in mid-operation.	• The Start-IDs and Song numbers are not recorded correctly. • There is an unrecorded blank area between Songs.
		A nonexistent Song number was designated in the program.
Other	TOC recording is not possible.	The A-TIME or End Mark is not recorded. There is an unrecorded area in the middle of the recording.
	A certain section is skipped without being played (skip operation).	A Skip-ID is recorded on the tape. • Cancel the skip function. (See page 25.) • Erase the Skip-ID. (See page 23.)
	The tape starts rewinding during playback (or during fast-forwarding).	• The tape was wound fully to the end (automatic rewind function).
	The tape counter does not display the time.	Time data is not recorded on the tape.
	TOC data is not displayed.	• TOC data is not recorded → Use the TOC-recording function. (See page 22.)
	A-TIME recording is not possible.	There is an unrecorded blank area in the middle of the recording or at the beginning of the tape.
	Only the recording indicator lights.	The deck was left in record-standby mode for more than 5 minutes.
	"ERR" appears and only the cassette tray can be opened/closed.	• Condensation (See p.4) • The heads are dirty. (See "Cleaning tape heads" on page 4.)

AFTER-SALES SERVICE FOR PIONEER PRODUCTS

Please contact the dealer or distributor from where you purchased the product for its after-sales service (including warranty conditions) or any other information. In case the necessary information is not available, please contact the PIONEER's subsidiaries (regional service headquarters) listed below:

Please do not ship your product to the companies at the addresses listed below for repair without adovance contact, for these companies are not repair locations.

AMERICA

PIONEER ELECTRONICS SERVICE, INC.
P.O.BOX 1760, LONG BEACH, CA 90801-1760, U.S.A.

EUROPE

PIONEER ELECTRONIC (EUROPE) N.V.
HAVEN 1087, KEETBERGLAAN 1, 9120 MELESELE, BELGIUM

ASEAN

PIONEER ELECTRONICS ASIACENTRE PTE.LTD.
501 ORCHARD ROAD, #10-00 LANE CRAWFORD PLACE, SINGAPORE 0923

JAPAN AND OTHERS

PIONEER ELECTRONIC CORPORATION (HEAD OFFICE)
4-1, MEGURO 1-CHOME, MEGURO-KU, TOKYO 153 JAPAN

SPECIFICATIONS

Type ..... Rotating-head type digital audio recorder
Tape speed. ..... 8.15mm/s (SP)
16.3mm/s (HS)
Recording time (using a standard 120-min. tape)
..... SP: Maximum 120 minutes
HS: Maximum 60 minutes
Number of channels ..... 2-channel stereo
Number of quantum bits ..... 16-bit linear
Sampling frequency ..... 48kHz (Record/Playback)
44.1kHz (Record/Playback)
96kHz (Record/Playback)
88.2kHz (Record/Playback)
Error correction method ..... Double-encoded Reed-Solomon code
Modulation method ..... 8 – 10 conversion
Emphasis ..... Analog recording: OFF fixed
Playback: Auto-select
Head ..... AT-construction sendust head
Recording frequency characteristics . HS (fs = 96kHz): 20 – 44kHz
HS (fs = 88.2kHz): 20 – 40kHz
SP (fs = 48kHz): 20 – 22kHz(±0.5dB)
SP (fs = 44.1kHz): 20 – 20kHz(±0.5dB)
SN ratio ..... 90dB or more
Dynamic range ..... 90dB or more
Total harmonic distortion ..... 0.006% or less
Wow and flutter .. Within measurement limit (±0.001% W. PEAK)

■ Analog Input/Output Terminals

Line input terminal ..... XLR-3 type;
Input level: +4dBu/-10 dBv (switchable)
(Input impedance: 10kΩ)
Line output terminal ..... XLR-3 type;
Output level: +4dBu/-10 dBv (switchable)
(Output impedance: 100Ω or less)
Headphone output terminal ..... Stereo standard jack 6mmϕ
(Maximum 40mW, load impedance: 32Ω)

■ Digital Input/Output Terminals (AES/EBU Type) (format: EIAJ CP-1201 TYPE Ⅰ)

Input terminal ..... XLR-3 type
(Input impedance: 110Ω,with transformer)
Output terminal ..... XLR-3 type
(Output impedance: 110Ω or less,with transformer)

■ Digital Input/Output Terminals (IEC958Type) (format : EIAJ CP-1201 TYPE Ⅱ)

Input terminal ..... RCA; 0.5V p-p (Input impedance: 75Ω)
Output terminal ..... RCA; 0.5V p-p (Output impedance: 75Ω)

■ Remote Control Terminal

Parallel remote terminal ..... 8-pin DIN connector
Serial remote terminal
..... 9-pin D-Subconnector x 2 (input/output use)
(Corresponding to RS-422A)

■ Power Source / Others

Power source ..... AC100V/120V/230V (selection), 50/60Hz
Power consumption 44W
External dimensions ..... 483(W) x 138(H) x 377(D)mm
19(W) x 5-7/16(H) x 14-7/8(D)in.
Weight 7.6kg (16lb 12oz)

■ Accessories

Power cable for the US 1
Power cable for Europe 1
Operating Instructions 1
Wireless remote control unit 1
Remote control unit batteries (size AAA/IEC R03) 2

NOTE:

- *The accessory power cables can only be used on the continent of North America and in Europe.*
- *Specifications and design are subject to possible modifications without notice, due to improvements.*

France : tapez 36 15 PIONEER

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